



*National Institute of Dental and Craniofacial Research
Division of Intramural Research*

INTERACTIONS
WITH
THE SCIENTIFIC
COMMUNITY

2001

National Institute of Dental
and Craniofacial Research

Division of Intramural Research

Interactions with the Scientific Community

2001

For Administrative Use Only

National Institute of Dental and Craniofacial Research

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Craniofacial Developmental Biology and
Regeneration Branch

Craniofacial Developmental Biology and Regeneration Branch

1. Invited Talks

Kenneth M. Yamada, M.D., Ph.D.

Gordon Research Conference on "Fibronectin, Integrins and Related Molecules," Ventura, CA

Gordon Research Conference on "Salivary Glands and Saliva," Ventura, CA

Keystone Symposium on "Cell Migration and Invasion," Tahoe City, CA

American Red Cross, Holland Laboratory, Gaithersburg, MD

"The Cytoskeleton and Human Disease," Marseille, France

American Association for Cancer Research Symposium on "Force, Function, and Form," New Orleans, LA

Hynda K. Kleinman, Ph.D.

American Red Cross, Gaithersburg, MD

USUHS, Bethesda, MD

13th International Symposium on Bioscience & Human Technology, Ibaraki, Japan

AACR Symposium on Extracellular Matrix, New Orleans, LA

Advances in Immunology, Symposium on Thymosins, New York, NY

Genzyme, Inc., Needham, MA

Angiogenesis: Basic Science & Clinical Development, Crete, Greece

Wayne State University, Detroit, MI

NIH Research Day

Penn. State University Medical School, Hershey, PA

American Society of Hematology, Orlando, FL

Yoshihiko Yamada, Ph.D.

International Symposium on Orthopedic Surgery, Gifu, Japan

Matthew P. Hoffman, B.D.S., Ph.D.

Gordon Research Conference on Salivary Glands and Saliva "Array Analysis of Salivary Gland Development: Where do we go from here?" Ventura, CA

University of Maryland Dental School Student Research Symposium,

"Functional Genomics and Salivary Gland Development," Baltimore, MD

International Association of Dental Research, "Fibroblast growth factor receptor 2 (IIIb) regulates branching morphogenesis of developing mouse submandibular glands," Chiba, Japan

Brazilian Cell Biology Society Meeting, "Fibroblast growth factor receptors and laminin-10 are important regulators of branching morphogenesis of embryonic salivary glands," Sao Paulo, Brazil

Lourdes Ponce, Ph.D.

Second China International Symp. on Angiogenesis & Hematopoiesis, China
EntreMed, Inc., Rockville, MD

2. Sessions Chaired at Professional Meetings

Kenneth M. Yamada, M.D., Ph.D.

Infectious Diseases and the Actin Cytoskeleton, The Cytoskeleton and Human Disease, Marseille, France

Hynda K. Kleinman, Ph.D.

Angiogenesis: Basic Science & Clinical Development, Crete, Greece

3. Symposia, Meetings, or Conferences Organized

4. Consultant for Universities or Industries

Kenneth M. Yamada, M.D., Ph.D.

Member, International Scientific Review Board, Department of Molecular Pathology and Medicine, San Raffaele Scientific Institute (DIBIT), Milan, Italy

Hynda K. Kleinman, Ph.D.

Board member, NASA, Microgravity Working Group
Member, Review Panel of graduate programs, USUHS
Amer. Society for Matrix Biology, Council Member

Yoshihiko Yamada, Ph.D.

External Advisory Committee for R01, MD Anderson Cancer Center, Houston, TX

5. Elected Offices

Kenneth M. Yamada, M.D., Ph.D.

Council, International Society for Matrix Biology

Hynda K. Kleinman, Ph.D.

Board, Metastasis Research Society
Amer. Society for Matrix Biology, Council Member
Fellow of AAAS, elected by the AAAS Council

6. Editorial Responsibilities Other than Reviewing Manuscripts

Kenneth M. Yamada, M.D., Ph.D.

Editor, *The Journal of Cell Biology*
Editor, *Journal of Cellular Physiology*
Associate Editor, *Matrix Biology*
Editorial Board, *Journal of Cell Science*
Editorial Board, *Molecular Membrane Biology*
Editorial Board, *Current Protocols in Cell Biology*
Editorial Board, *Cell Communication and Adhesion*

Editorial Board, *Cell Structure and Function*

Hynda K. Kleinman, Ph.D.

Editorial Board, *The Journal of Cell Biology*

Editorial Board, *Journal of the National Cancer Institute*

Editorial Board, *The Catalyst*

Editorial Board, *International J Biochemistry & Cell Biology*

Editorial Board, *Cancer Research*

Editorial Board, *FASEB J*

Editorial Board, *Angiogenesis*

Editorial Board, *The Endothelium*

Editorial Board, *Clinical Cancer Research*

Yoshihiko Yamada, Ph.D.

Associate Editor, Matrix Biology

Board, Journal of Biological Chemistry

7. Professional or Governmental Advisory Capacity

Kenneth M. Yamada, M.D., Ph.D.

Member, NIH Senior Biomedical Research Service Policy Board

Member, NSF Scholars-in-Residence advisory committee

Member, NIH Committee on Scientific Conduct and Ethics

NIH Postdoctoral Fellow Awards Committee

Hynda K. Kleinman, Ph.D.

Evaluator and Advisor, HHMI Summer Scholars Program, NIH

Evaluator, NIDCR Summer Dental Scholars Program

Chair, NEI Search Committee for Chief, Lab of Retinal Cell & Molecular Biology

Chair, NEI Search Committee for a tenure track investigator for LPD, NIAID

NASA International Space Life Sciences Flight & Peer Review Panel grant review

American Society for Cell Biology, Abstract Programming Committee for annual meeting

NIH, Academy Working Group

Evaluator, Association for Women in Science Schectman (undergraduate) Award

Tenure and Promotion Committee, NIDCR

Central Tenure and Promotion Committee, NIH

AWIS Educational Foundation Awards Fellowship evaluator

Yoshihiko Yamada, Ph.D.

Chair, NIDCR Postdoctoral Award Committee

Member, JSPS Fellow selection committee

8. Appeared as an Invited Expert

Hynda K. Kleinman, Ph.D.

Modern Drug Discovery-interviewed and quoted in article on prostate cancer highlighting our recent publication in cancer research on bone metastasis.

9. Professional Publications with Outside Co-authors

Kenneth M. Yamada, M.D., Ph.D.

Aframian, D.J., Zeng, C., Goldsmith, C.M., Nikolovski, J., Cukierman, E., Yamada, K.M., ¹Mooney, D.J., Birkedal-Hansen, H., and Baum, B.J. Using HSV-thymidine kinase for safety in an allogeneic salivary graft cell line. *Tissue Engineering* 7: 405-413, 2001. (¹Department of Biomedical Engineering, Dental and Engineering Schools, University of Michigan, Ann Arbor, MI)

¹Katz, B.-Z., Krylov, D., Vinson, C., and Yamada, K.M. Novel application for producing site-specific modifications of subcellular structures: Enzymatic modulation of focal contacts by leucine zipper-mediated targeting. In *Cloning and Expression Vectors for Gene Function Analysis*. Edited by Q. Lu and M.P. Weiner. Westborough, MA: BioTechniques Press, Eaton Publishing, pp. 191-194, 2001. (¹The Hematology Institute, Tel-Aviv Medical Center, Tel-Aviv, Israel)

¹Danen, E.H.J. and Yamada, K.M. Fibronectin, integrins, and growth control. *J. Cell. Physiol.* 189: 1-13, 2001. (¹Division of Cell Biology, The Netherlands Cancer Institute, Amsterdam, The Netherlands)

¹Lam, K., ¹Zhang, L., Yamada, K.M., and ¹Lafrenie, R.M. Adhesion of epithelial cells to fibronectin or collagen I induces alterations in gene expression via a protein kinase C-dependent mechanism. *J. Cell. Physiol.* 189: 79-90, 2001. (¹Northeastern Ontario Regional Cancer Centre, Sudbury, Ontario, Canada)

¹Geiger, B., ¹Bershadsky, A., Pankov, R., and Yamada, K.M. Transmembrane cross-talk between the extracellular matrix and the cytoskeleton. *Nature Rev. Cell Mol. Biol.* 2: 793-805, 2001. (¹The Weizmann Institute of Science, Rehovot, Israel)

Aframian, D.J., Redman, R.S., Yamano, S., Nikolovski, J., Cukierman, E., Yamada, K.M., Kriete, M.F., Swaim, W.D., ¹Mooney, D.J., and Baum, B.J. Tissue compatibility of two biodegradable tubular scaffolds implanted adjacent to skin or buccal mucosa in mice. *Tissue Engineering* In press, 2001. (¹Department of Biomedical Engineering, Dental and Engineering Schools, University of Michigan, Ann Arbor, MI)

Hynda K. Kleinman, Ph.D.

¹Cid, M.C., ¹Esparza, J., ²Schnaper, H.W., ¹Juan, M., ¹Yague, J., ³Grant, D.S., ¹Urbano-Marquez, A., ⁴Hoffman, G.S., and Kleinman, H.K. Estradiol increases endothelial cell attachment to extracellular matrix proteins via an increase in integrin expression. *Angiogenesis* 3: 271-280, 2000. (¹Hospital Clinic I Provincial, Barcelona, Spain, ²Department of

- Pediatrics, Northwestern University School of Medicine, Chicago, IL,
³Cardeza Foundation, Jefferson Medical College, Philadelphia, PA,
⁴Cleveland Clinic, Cleveland, OH)
- Sosne, G., Chen, C.C., ¹Thai, K., Kennedy, M., and Kleinman, H.K. Thymosin beta4 promotes corneal epithelial cell migration in vitro and accelerates wound healing in vivo. *Exp. Eye Res.* 72: 605-608, 2001. (¹USUHS, Bethesda, MD)
- ¹Webber, M.M., ¹Quader, S.T.A., Kleinman, H.K., ¹Bello-DeOcampo, D., ¹Storto, P.D., ¹Bice, G., ¹de Mendonca-Claca, W., and ¹Williams, D.E. An in vitro/in vivo model of human cell lines for prostate carcinogenesis and tumor progression. *The Prostate* 47: 1-13, 2001. (¹Michigan State University, East Lansing, MI)
- ¹Bello-DeOcampo, D., Kleinman, H.K., ¹Deocampo, N.D., and ¹Webber, M.M. Laminin-1 and alpha-6 beta-1 integrin regulate acinar morphogenesis of normal and malignant human prostate epithelial cells. *The Prostate* 46: 142-153, 2001. (¹Michigan State University, East Lansing, MI)
- ¹Bello-DeOcampo, D., Kleinman, H.K., and ¹Webber, M.M. alpha-6 beta-1 integrin and EGF regulate normal and malignant acinar morphogenesis of human prostatic epithelial cells. *Mut. Res. Fundamental Molec. Mech. of Mutagenesis* 480-481(1-2): 209-217, 2001. (¹Michigan State University, East Lansing, MI)
- ¹Quader, S.T.A., ¹Bello-DeOcampo, D., ¹Williams, D.E., Kleinman, H.K., and ¹Webber, M.M. Evaluation of the chemopreventive potential of retinoids using a novel in vitro human prostate carcinogenesis model. *Mut. Res.* 496: 153-161, 2001. (¹Michigan State University, East Lansing, MI)
- Ponce, M.L., ¹Nomizu, M., and Kleinman, H.K. An angiogenic laminin gamma-1 site and its antagonist bind through the alpha-v beta-3 and alpha-5 beta-1 integrins. *FASEB J* 15: 1389-1397, 2001. (¹Hokkaido University, Sapporo, Japan)
- ¹Yoshida, Y., ¹Hosokawa, K., ¹Dantes, A., ²Kotsuji, F., Kleinman, H.K., and ¹Amsterdam, A. Role of laminin in ovarian cancer tumor growth and metastasis via regulation of Mdm2 and Bcl-2 expression. *International J. Oncol.* 18: 913-921, 2001. (¹Weizmann Institute, Rehovot, Israel, ²Fukui Medical University, Fukui, Japan)
- ¹Gho, Y.S., Kim, P.N., Li, H.C., Elkin, M., and Kleinman, H.K. Stimulation of tumor growth by human soluble intercellular adhesion molecule-1 (sICAM-1). *Cancer Res.* 61: 4253-4257, 2001. (¹Kyung Hee University, Korea)
- Hoffman, M.P., Engbring, J.A., Nielsen, P., Vargas, J., Steinberg, Z., Karmand, A.J., ¹Nomizu, M., Yamada, Y., and Kleinman, H.K. Cell type-specific differences in glycosaminoglycans modulate the biological activity of a heparin-binding peptide (RKRLQVQLSIRT) from the G-domain of the laminin alpha-1 chain. *J. Biol. Chem.* 276: 22077-22085, 2001. (¹Hokkaido University, Sapporo, Japan)

Nomizu, M., Yokoyama, F., Suzuki, N., Okazaki, I., Nishi, N., Ponce, L.M., Kleinman, H.K., Yamamoto, Y., Nakagawa, S., and Mayumi, T. Identification of homologous biologically active sites on the N-terminal domain of laminin alpha chains. *Biochemistry* 40: 15310-15317, 2001. (¹Hokkaido University, Sapporo, Japan)

Kleinman, H.K. and ¹Liau, G. Gene therapy for anti-angiogenesis? *J. Natl. Cancer Inst.* 93: 965-957, 2001 (invited editorial). (¹Novartis, Rockville, MD)

¹Sosne, G., ¹Szliter, E.A., ¹Barrett, R., ¹Kernacki, K.A., Kleinman, H.K., and ¹Hazlett, L.D. Thymosin beta4 promotes corneal wound healing and decreases inflammation in vivo following alkali burn. *Exp. Eye Res.* In press, 2001. (¹Wayne State Medical School, Detroit, MI)

Yoshihiko Yamada, Ph.D.

¹Watanabe, H., de Caestecker, M.P., and Yamada, Y. Transcriptional cross-talk between Smad, ERK1/2, and p38 mitogen-activated protein kinase (MAPK) pathways regulates TGFbeta-induced aggrecan gene expression in chondrogenic ATDC5 cells. *J. Biol. Chem.* 276: 14466-14473, 2001. (¹Aichi Medical University, Aichi, Japan)

Arikawa-Hirasawa, E., ¹Wilcox, R.W., Le, A., Silverman, L., Govindraj, P., Hassell, J.H., and Yamada, Y. Dyssegmental dysplasia, Silverman-Handmaker type, is caused by functional null mutations of perlecan. *Nature Genetics* 27: 431-434, 2001. (¹University of California at Los Angeles, Medical School, Los Angeles, CA)

Hoffman, M.P., Engbring, J.A., Nielsen, P.K., Vargas, J., Steinberg, Z., Karmand, A.J., ¹Nomizu, M., Yamada, Y., and Kleinman, H.K. Cell type-specific differences in glycosaminoglycans modulate the biological activity of a heparin-binding peptide (RKRLQVQLSIRT) from the G domain of the laminin alpha-1 chain. *J. Biol. Chem.* 276: 22077-22085, 2001. (¹Hokkaido University, Sapporo, Japan)

¹Sekiya, I., Koopman, P., ¹Tsuji, K., Mertin, S., Harley, V., Yamada, Y., ¹Shimomita, K., ¹Nifuji, A., and ¹Noda, M. Dexamethasone enhances SOX9 expression in chondrocytes. *J. Endocrinol.* 169: 573-579, 2001. (¹Tokyo Medical and Dental University, Tokyo, Japan)

Elisseeff, J., ¹Langer, R., and Yamada, Y. Biomaterials for tissue engineering. In *Tissue Engineering and Biodegradable Equivalents: Scientific and Clinical Applications*. Edited by Lewandrowski, Wise, Trantolo, Gresser, Yaszemski, and Altobelli. 2001, in press. (¹Massachusetts Institute of Technology, Boston, MA)

Arikawa-Hirasawa, E., ¹Wilcox, W.R., and Yamada, Y. Dyssegmental dysplasia, Silverman-Handmaker type: Unexpected role of perlecan in cartilage development. *Amer. J. Med. Genetics* 106: 254-257, 2000. (¹University of California at Los Angeles, Medical School, Los Angeles, CA)

- ¹Sekiya, I., Koopman, P., Tsuji, K., Mertin, S., Harley, V., Yamada, Y.,
¹Shinomiya, K., ¹Niguji, A., and ¹Noda, M. Transcriptional suppression
of Sox9 expression in chondrocytes by retinoic acid. *J. Cell. Biochem.*
81: 71-78, 2001. (¹Tokyo Medical and Dental University, Tokyo, Japan)
- ¹Unda, F., Iehara, N., ¹De Vega, S., ¹De la Fuente, M., ¹Vilaxa, A., and Yamada,
Y. Study of novel genes involved in odontoblast and ameloblast
differentiation. *Int. J. Dev. Biol.* 45(S1): S103-S104, 2001.
(¹University of the Basque Country, Leioa, Vizcaya, Spain)
- ¹Sasaki, T., ¹Göhring, W., ¹Mann, K., ¹Brakebusch, C., Yamada, Y., ¹Fässler, R.,
and ¹Timpl, R. Short arm region of laminin-5 gamma-2 chain: Structure,
mechanism of processing and binding to heparin, and proteins. *J. Mol.*
Biol. 314: 751-763, 2001. (¹Max-Planck-Institute, Munich, Germany)

Matthew P. Hoffman, B.D.S., Ph.D.

Hoffman, M.P., Engbring, J.A., Nielsen, P., Vargas, J., Steinberg, Z., Karmand,
A.J., ¹Nomizu, M., Yamada, Y., and Kleinman, H.K. Cell type-specific
differences in glycosaminoglycans modulate the biological activity of a
heparin-binding peptide (RKRLQVQLSIRT) from the G-domain of the
laminin alpha-1 chain. *J. Biol. Chem.* 276: 22077-22085, 2001.
(¹Hokkaido University, Sapporo, Japan)

10. Other

Kenneth M. Yamada, M.D., Ph.D.

Project Officer, Contract No. N01-DE-92630 with Washington University, St.
Louis, "Novel Human Oral and Craniofacial Genes"

Scientific Advisory Board, French-American Colloquium on the Cytoskeleton
and Human Disease.

Sponsored two Japan Society for the Promotion of Science Fellows with a
D.D.S./Ph.D. and an M.D./Ph.D.

Patent Applications and Licenses:

"Artificial Salivary Gland," B. Baum, S. Wang, E. Cukierman, and K. Yamada,
Anti-integrin monoclonal antibodies licensed through Office of Technology
Transfer

Material Transfer Agreements signed with the following institutions to provide
them with gifts of plasmids, antibodies, and other unique research reagents:

Massachusetts General Hospital: 2 independent MTAs

The Weizmann Institute of Science, Department of Molecular Cell Biology,
Israel

Imperial College, Biomedical Sciences Division, Cell and Molecular Biology
Section, UK

University of Texas Southwestern Medical Center at Dallas: 3 independent
 MTAs
 Columbia University
 Georgetown University, Lombardi Cancer Center, Departments of Oncology and
 Cell Biology
 Hospital for Sick Children, Toronto, Ontario, Canada
 Washington University St. Louis
 Gesellschaft fuer Biotechnologische Forschung, Braunschweig, Germany
 Celltech Group, Berkshire, UK
 University of California through Lawrence Berkeley National Laboratory
 Institute of Physiology at the TU, Dresden
 Tianjin Neurological Institute, General Hospital of Tianjin Medical University,
 China
 The Netherlands Cancer Institute, Division of Cell Biology
 Osaka University, Institute for Microbial Disease
 University of Zurich, Institute of Zoology
 Hebei Medical University, Department of Biochemistry, China
 University of Wisconsin, Madison
 University of Helsinki, Institute of Biotechnology
 Northwestern University Medical School, Division of Nephrology/Hypertension
 The University of Tokyo, Department of Applied Biological Chemistry
 Stanford University, Department of Surgery and Genetics
 Tulane University Health Sciences Center
 University of Toronto, Canada
 University of Texas Health Sciences Center at San Antonio
 University of Washington and Howard Hughes Medical Institute
 Medical University of South Carolina
 Medical Center of FuDan University, China
 Penn State College of Medicine
 University of South Florida College of Medicine, Department of Pathology
 University Health Network, Ontario, Canada
 Beijing Neurological Institute, Department of Neurosurgery, Tiantan Hospital,
 China
 University of California, San Diego
 University of Kentucky
 University of Manchester, School of Biological Sciences, UK
 McGill Cancer Centre, Montreal, Canada
 University of Leicester, Department of Biochemistry, UK
 Adelphi University
 Johns Hopkins School of Medicine
 Hosted Dr. Ana Maria Valles from France for mini-sabbatical
 Hosted a D.M.D., Ph.D. student in the Medical University of South Carolina-
 NIDCR graduate program
 Sponsored two minority summer students

Hynda K. Kleinman, Ph.D.

Patent Applications and Licenses:

Matrigel licensed to Sigma Chemical Co. and Becton Dickinson

Thymosin beta4 licensed to RegenRX, Inc.

Thymosin beta4 patent application

Scientific Related Activities:

Finalist Judge, Intel Talent Search, Washington, DC

Adjunct Professor at Department of Anatomy and Cell Biology, Georgetown Medical School, Washington, DC

Adjunct Professor at Department of Biochemistry and Molecular Biology, George Washington Medical School, Washington, DC

Lectured at UHHS on extracellular matrix for graduate course in Cell Biology

Lectured at GWU Medical School to graduate students in Cell Biology

Lectured to students at Paint Branch High School on angiogenesis

Lectured to students at Paint Hoover Middle School on angiogenesis

Shared many reagents including antibodies, basement membrane components, peptides, etc. with researchers in the NIH community as requested

Hired four diverse summer students into Section

Hosted Maria Cid, Department of Medicine, Hospital Clinic, Barcelona, Spain, for mini-sabbatical

Hosted Dr. Mary Jo Mulligan-Kehoe, Dartmouth Medical School for training in angiogenesis techniques

Hosted Dr. Thomas Huff, Erlangen, Germany, for mini-sabbatical

Obtained NASA funding to study salivary gland cell differentiation in microgravity

Supported a Co-op student from Penn State U for six months

One pre-doc IRTA accepted and attended dental school

Provided gifts of clones, antibodies, and other unique research reagents to outside researchers

Yoshihiko Yamada, Ph.D.

Project Officer, Contract No. N01-DE-92630 with Washington University, St. Louis, "Novel Human Oral and Craniofacial Genes"

Sponsored a Howard Hughes Medical Institute Research Fellow

Sponsored three Japan Society for the Promotion of Science Fellows with two D.D.S./Ph.D. and an M.D./Ph.D.

Sponsored a Visiting Fellow with D.D.S.

Material Transfer Agreements signed with the following institutions to provide them with gifts of plasmids, antibodies, and other unique research reagents:

Harvard Medical School, Boston, MA

Case Western Reserve University, Cleveland, OH

Royal Victoria Hospital, Montreal, Canada

Cleveland Clinic Foundation, Cleveland, OH

Okayama University Medical School, Okayama, Japan

University of New Mexico, Albuquerque, NM

Mount Sinai School of Medicine, New York, NY

Lerner Research Institute, Cleveland, OH
Istituto Nazionale Tumori Milano, Milano, Italy
University of Toronto, Toronto, Canada
Xinqiao Hospital, Chongqing, China
Boys Town National Research Hospital, Omaha, NE
The Salk Institute, La Jolla, CA
University of Birmingham, Birmingham, United Kingdom
Weizmann Institute of Science, Rehovot, Israel
Northwestern University, Chicago, IL
Toyama Medical & Pharmaceutical University, Toyama, Japan
Washington State University, Pullman, WA

Matthew P. Hoffman, B.D.S., Ph.D.

Invited for 2-week Mini-Sabbatical to Department of Oral Pathology, Sao Paulo, Brazil

Provided Reagents and Technical assistance to the following:

Pedro Dominguez, Dept. de Bioquímica y Biología Molecular, Universidad de Oviedo, Spain

Dr. Gwynneth Offner, GI Section, Boston University, Boston, MA

Dr. Ruy Jaeger, FOU SP, Departamento de Patologia Bucal, Sao Paulo, Brazil

Dr. M.C. Sogayar, Instituto de Química/Chemistry Institute, University of São Paulo, São Paulo, Brazil

Dr. M. Nomizu, Graduate School of Environmental Earth Science, Hokkaido University, Sapporo, Japan

Craniofacial and Skeletal Diseases Branch

Craniofacial and Skeletal Diseases Branch

1. Invited Talks

Pamela Gehron Robey, Ph.D.

The Burnham Institute, "Bone Marrow Stromal Cells in Health and in Disease,"
La Jolla, CA

University of California – San Francisco Dental Alumni Association, "The
Biology of Bone and Its Marrow," San Francisco, CA

Keystone Symposium, "The Biology of Bone Marrow Stromal Cells," Durango,
CO

International Society for Hematotherapy & Graft Engineering Annual Meeting,
"The Biology of Bone Marrow Stromal Cells," New Orleans, LA

German Osteology Society Annual Meeting, "The Cell and Molecular Biology
of Bone Formation," Wiessbaden, Germany

Basic and Applied Research in Skeletal Tissue Workshop, "Pre-clinical trials for
the use of bone marrow stromal cells in bone regeneration," Camogli, Italy

The McCune-Albright Syndrome: New Insights on Bone Fibrous Dysplasia

Workshop, "Clinical Studies in Fibrous Dysplasia of Bone and McCune-Albright
Syndrome," Turin, Italy

American Academy of Orthopaedic Surgeons/National Institutes of Health

Molecular Biology in Orthopaedics Workshop, "Patterns of Bone and Marrow
Formation," Scottsdale, AZ

American Society for Bone and Mineral Meet the Professor, "Bone Marrow
Stromal Stem Cells," Phoenix, AZ

Third International Workshop on Adverse Drug Reactions and Lipodystrophy in
HIV, "Bone and Its Marrow," Athens, Greece

American Association for Cancer Research Special Conference on New
Discoveries in Prostate Cancer Biology and Treatment, "The Biology of Bone
Marrow Stroma and Its Role in Cancer Metastasis," Naples, FL

University of Connecticut Department of Endocrinology, "Bone and Its
Stroma in Health and Disease," Farmington, CN

Marian Young, Ph.D.

2001 Symposium NIH Research Festival, "Animal Models of Skeletal Disease",
ASBMR, Lecture on Matrix Proteins, "State of the Art", Phoenix, AZ

2001 ASBMR Sponsored Symposium, "Genetic Approach to Skeletal Disease
Research", Phoenix, AZ

2. Sessions Chaired at Professional Meetings

Pamela Gehron Robey, Ph.D.

American Society for Bone and Mineral Research, "Basic State of the Art
Symposium," Phoenix, AZ

Working Group on Aging and the Human Skeleton, "Metastatic Bone Disease,"
Phoenix, AZ

3. Symposia, Meetings, or Conferences Organized

Pamela Gehron Robey, Ph.D.

Working Group on Aging and the Human Skeleton, "Metastatic Bone Disease,"
Phoenix, AZ

Marian Young, Ph.D.

Organizing Committee, 1st International Workshop on the Genetics of Bone
Disease, Davos Switzerland, March, 2001

Organizing Committee Member, 1st Joint Meeting of the International Bone and
Mineral Society and the European Calcified Tissue Society, June, 2001

4. Consultant for Universities or Industries

Pamela Gehron Robey, Ph.D.

Member, External Advisory Board, Osteoporosis and Metabolic Bone Diseases
Center, University of Arkansas, Little Rock, AR.

5. Elected Offices

6. Editorial Responsibilities Other than Reviewing Manuscript

Pamela Gehron Robey, Ph.D.

Editorial Board, *Bone*

Editorial Board, *BoneKEy*

Editorial Board, *Calcified Tissue International*

Editorial Board, *Endocrinology*

Editorial Board, *Journal of Bone and Mineral Research*

Advisory Board, *Japanese Journal of Bone and Mineral Research*

Marian Young, Ph.D.

Editorial Board, *Calcified Tissue International*

Larry Fisher, Ph.D.

Editorial Board, *Journal of Bone and Mineral Research*

7. Professional or Governmental Advisory Capacity

Pamela Gehron Robey, Ph.D.

Member, HHMI Research Scholars Program Committee

Member, Endocrine Society Annual Meeting Steering Committee

Chair, Membership Development Committee, American Society for Bone and
Mineral Research

Member, American Society for Bone and Mineral Research Program Committee

Grant Reviewer, Veteran's Administration

8. Appeared as an Invited Expert

Pamela Gehron Robey, Ph.D.

Science, interviewed and quoted in an article on bone regeneration.

9. Professional Publications with Outside Co-authors

Pamela Gehron Robey, Ph.D.

¹Bianco, P., and Robey, P.G. Stem cells in tissue engineering. *Nature* 414:118-121, 2001. (¹Universita "La Sapienza", Rome, Italy)

¹Bianco, P., ²Riminucci, M., Gronthos, S., and Robey, P.G. Bone marrow stromal stem cells: nature, biology, and potential applications. *Stem Cells* 19:180-192, 2001. (¹Universita "La Sapienza," Rome, Italy; ²Universita dell'Aquila, L'Aquila, Italy)

Collins, M.T., ¹Riminucci, M., ¹Corsi, A., ²Murphey, M.D., ³Wientroub, S., ⁴Bianco, P., and Robey, P.G. Angiomas of bone with localized mineralization defect. *J. Bone Miner. Res.* 16:1750-1753, 2001. (¹Universita dell'Aquila, L'Aquila, Italy; ²Armed Forces Institute of Pathology, Washington, D.C.; ³Tel Aviv University, Tel Aviv, Israel; ¹Universita "La Sapienza," Rome, Italy)

Collins, M.T., Chebli, C., Jones, J., Kushner, H., ²Consugar, M., ²Rinaldo, P., ³Wientroub, S., ⁴Bianco, P., and Robey, P.G. Renal phosphate wasting in fibrous dysplasia of bone is part of a generalized renal tubular dysfunction similar to that seen in tumor-induced osteomalacia. *J. Bone Miner. Res.* 16:806-813, 2001. (¹Mayo Clinic, Rochester, MN; Biomedical Computer Research Institute, Philadelphia, PA; ³Tel Aviv University, Tel Aviv, Israel; ⁴Universita "La Sapienza," Rome, Italy)

¹Gokhale, J.A., Robey, P.G., and ¹Boskey, A.L. The biochemistry of bone. In: Marcus, R., Feldman, D., and Kelsey, J. (eds.). *Osteoporosis*. Academic Press, San Diego, CA, pp. 107-212, 2001. (¹Hospital for Special Surgery, New York, NY)

Gronthos, S., ¹Franklin, D.M., ²Leddy, H.A., Robey, P.G., ²Storms, R.W., and ³Gimble, J.M. Surface protein characterization of human adipose tissue-derived stromal cells. *J. Cell. Physiol.* 189:54-63, 2001. (¹Zen-Bio, Research Triangle Park, NC; ²Duke University Medical Center, Durham, NC; Artec Science, Durham, NC)

Gronthos, S., ¹Simmons, P.J., ²Graves, S.E., and Robey, P.G. Integrin-mediated interactions between human bone marrow stromal precursor cells and the extracellular matrix. *Bone* 28:174-181, 2001. (¹Hanson Centre for Cancer Research, Adelaide, Australia; ²University of Adelaide, Australia)

Kuznetsov, S.A., Mankani, M.H., Gronthos, S., Satomura, K., ¹Bianco, P., and Robey, P.G. Circulating skeletal stem cells. *J. Cell Biol.* 153:1133-1140, 2001. (¹Universita "La Sapienza", Rome, Italy)

¹Riminucci, M., Collins, M.T., ¹Corsi, A., ²Boyde, A., ³Murphey, M.D., ⁴Wientroub, S., Kuznetsov, S.A., Cherman, N., Robey, P.G., and ⁵Bianco, P. Gnathodiaphyseal dysplasia: a syndrome of fibro-

osseous lesions of jawbones, bone fragility, and long bone bowing. *J. Bone Miner. Res.* 16:1710-1718, 2001. (¹Università dell'Aquila, L'Aquila, Italy; ²University College, London, UK; ³Armed Forces Institute of Pathology, Washington, D.C., ⁴Tel Aviv University, Tel Aviv, Israel, ⁵Università "La Sapienza," Rome, Italy)

Marian Young, Ph.D.

*Mao Z, Shay B, Hekmati M, Fermon E, Taylor A, Dafni L, Heikinheimo K, Lustmann, Fisher LW, Young MF and Deutsch D. The Human Tufelin Gene Structure: Cloning and Characterization, *Gene*, 279:181-196, 2001
(*Dental Research Unit Department of Oral Biology, Institute of Dental Science, Hebrew University, Israel)

Larry Fisher, Ph.D.

Fisher, L.W., Torchia, D.A., Fohr, B., Young, M.F. and Fedarko, N.S.
Flexible structures of SIBLING proteins, bone sialoprotein and osteopontin. *Biochem. Biophys. Res. Comm* 280:460-465 (2001).
Mao, Z., Shay, B., Hekmati, M., Fermon, E., Taylor, A., Dafni, L., Heikinheimo, K., Lustmann, J., Fisher, L.W., Young, M.F. and Deutsch, D. The human tufelin gene structure: identification and characterization. *Gene* 279:181-199 (2001).
Fedarko, N.S., Jain, A., Karadag, A., Van Eman, M.R. and Fisher, L.W. Elevated serum bone sialoprotein and osteopontin in colon, breast, prostate and lung cancer. *Clin. Cancer Res.* 7:4060-4066 (2001).
Corsi, A., Riminucci, M., Fisher, L.W. and Bianco, P. Achondrogenesis type 1B: Agenesis of cartilage interterritorial matrix as the link between gene defect and pathological skeletal phenotype. *Arch. Pathol. Lab. Med.* 125:1375-1378 (2001)

10. Other

Pamela Gehron Robey, Ph.D.

Patent application 60/219,989, "Adult human dental pulp stem cells in vitro and in vivo." Shi, S., Gronthos, S., and Robey, P.G.
Patent application 60/351,795, "Bone-forming composition, methods for making and methods of use." Mankani, M.H., Kuznetsov, S.A., and Robey, P.G.
Invention Report, "Principle and technique of cross linking collagen vehicles for promoting in vivo bone formation by transplanted human bone marrow stromal cells." Kuznetsov, S.A., Kohn, D., Lee, J., and Robey, P.G.
Material Transfer Agreement with The Boston University, Boston, MA, to provide human trabecular bone cells.
Material Transfer Agreement with OsteoPro A/S/ Herlev, Denmark, to provide human bone marrow stromal stem cells.
Material Transfer Agreement with University of Graz, Graz, Austria, to provide immortalized murine bone marrow stromal cell lines.

Host to Dr. David Kohn, University of Michigan, one year sabbatical.
Host to Dr. Andreas Prokezh, University of Graz, six month sabbatical.

Larry Fisher, Ph.D.

Filed one application for international patent

Sent more than 300 reagents to more than 120 laboratories around the world.

Gene Therapy and Therapeutics Branch

Gene Therapy and Therapeutics Branch

1. Invited Talks

Bruce J. Baum, D.M.D., Ph.D.

FDA/Japan Gene Therapy Symposium, Bethesda, MD, "Salivary glands as a target site for systemic gene therapeutics"

Global Congress on Dental Education, Prague, Czech Republic, "Impact of biology on dental education"

Boston University, "Salivary glands: a potential target for gene therapy" and "Physiology of salivary gland secretion"

Tokyo Dental College High Technology Center Research Workshop, Makuhari, Japan, "Problems and prospects for clinical gene transfer to salivary glands"

American Association of Oral Biologists Symposium, Chiba, Makuhari, Japan, "Re-engineering salivary gland functions"

Indu Ambudkar, Ph.D.

Major Symposia:

2001 - Invited speaker, Gordon Conference on Saliva and Salivary Glands

2001 - Invited speaker, Workshop on Mucolipin, Trp, and Human Disease"

Invited Seminars

2001 - Neurobiotechnology Center, Ohio State University, Columbus, Ohio

2001 - Department of Physiology, UMDNJ, Newark, New Jersey

2001 - Institute of Pharmacology and Toxicology, University of Saarlandes, Homburg, Germany

2001 - Department of Pharmacology, University of Illinois, Chicago, USA

R. James Turner, Ph.D.

34th International Union of Physiological Sciences Congress 2001, "Function and regulation of the secretory Na-K-2Cl cotransporter (NKCC1)", Christchurch, New Zealand.

International Union of Physiological Sciences Satellite Symposium, Electrolyte Transport across Exocrine Epithelia, "Structure and function of the secretory Na-K-2Cl cotransporter NKCC1", Leura, Australia.

John A. Chiorini, Ph.D.

University of Michigan - "Characterization of AAV4, and AAV5

transduction" Targeted Genetics- Seattle, WA "Characterization of AAV4, and AAV5 transduction"

American Society of Virology - Madison, WI, "Role of Sialic acid in AAV4 and AAV5 Binding and Transduction"

Stanley Pillemer, M.D.

Media Roundtable on Autoimmune Diseases: Sjögren's Syndrome: Update on Diagnosis and Treatment, New York City, NY, February 2001

Johns Hopkins University, Rheumatology Grand Rounds "Sjögren's Syndrome:

An Update on Diagnosis and Treatment.” March 16, 2001
University of Michigan, Rheumatology Grand Rounds “Sjögren’s Syndrome: An Update on Diagnosis and Treatment,” April 27, 2001
State of the art lecture. ”Sjögren’s syndrome”
Swedish Rheumatology Society Annual Meeting, May 17, 2001
Keynote speaker, and panelist: Australasian Sjögren’s Syndrome Conference, May 30 and 31, 2001
Clinical Trials in Sjögren’s Syndrome: The State of the Art, November 2001, American College of Rheumatology Annual Scientific Meeting, San Francisco

2. Sessions Chaired at Professional Meetings

Bruce J. Baum, D.M.D., Ph.D.

Chair, Section 5.3 (Research), “DentEdEvolves”, Global Congress on Dental Education, Prague, Czech Republic, March, 2001

R. James Turner, Ph.D.

Discussion Leader, Gordon Research Conference on Salivary Glands and Saliva, Ventura CA.

Stanley Pillemer, M.D.

Sjogren’s Syndrome Foundation Meeting, San Francisco, California, November, 2001, International framework for clinical investigation and clinical trials in Sjögren’s syndrome.

3. Symposia, Meetings or Conferences Organized

Bruce J. Baum, D.M.D., Ph.D.

“Recovery of function in salivary glands” at IADR meeting in Makuhari, Chiba, Japan in June, 2001

Indu Ambudkar, Ph.D.

Ca²⁺-dependent Neuronal Gene Regulation; NIH Calcium Day Symposium.

Stanley Pillemer, M.D.

Sjogren’s Syndrome Foundation Meeting, San Francisco, California, November, 2001, International framework for clinical investigation and clinical trials in Sjögren’s syndrome.

4. Consultant for Universities or Industries

Bruce J. Baum, D.M.D., Ph.D.

Member, Board of Overseers, Tufts University School of Dental Medicine, Boston, MA

Member, Scientific Advisory Board, Genteric, Inc., Alameda, CA

Visiting Professor, Tokyo Dental College, Chiba, Japan

Visiting Professor, Tokyo Medical and Dental University, Tokyo, Japan
Consultant, Inspire Pharmaceuticals, Durham, NC

John A. Chiorini, Ph.D.
Advisory Board- American Type Culture Collection

5. Elected Offices

Stanley Pillemer, M.D.
Member, Medical and Scientific Board, Sjogren's Syndrome Foundation

6. Editorial Responsibilities Other Than Reviewing Manuscripts

Bruce J. Baum, D.M.D., Ph.D.
Associate Editor, European Journal of Dental Education
Editorial Board, Oral Surgery, Oral Medicine and Oral Pathology
Editor for the Americas, Oral Diseases

R. James Turner, Ph.D.
Editorial Board, American Journal of Physiology: Gastrointestinal Physiology

Stanley Pillemer, M.D.
Associate Editor, Journal of Alternative and Complementary Medicine.

7. Professional or Governmental Advisory Group

Bruce J. Baum, D.M.D., Ph.D.
Member, NIH Senior Biomedical Research Service Policy Board
Member, Board of Tutors, NIH Clinical Research Training Program
Member, Admissions Committee, NIH-Duke Master of Health Sciences in
Clinical Research Program
Member, Research Panel, Future of Dentistry Committee, American Dental
Association

Indu Ambudkar, Ph.D.
Reviewed grants for Wellcome Foundation, UK; Alzheimers Association, USA.,
and FWF, Austria

Stanley Pillemer, M.D.
Sjogren's Syndrome Foundation.

8. Appeared as Invited Expert

9. Professional Publications With Outside Co-authors

Bruce J. Baum, D.M.D., Ph.D.

- Aframian, D.J., Zheng, C., Goldsmith, C.M., Nikolovski, J.¹, Cukierman, E., Yamada, K.M., Mooney, D.J.¹, Birkedal-Hansen, H. and Baum, B.J. Using HSV-thymidine kinase for safety in an allogeneic salivary graft cell line. *Tissue Engineering* 7:405-413, 2001. (University of Michigan¹)
- Heron, L.¹, Karas, M.¹, Goldsmith, C.M., Baum, B.J. and LeRoith, D.¹ IGF-1 receptor activation rescues UV-damaged cells through a p38 signaling pathway: implications for the role of the IGF-1 receptor in DNA repair. *J. Biol. Chem.* 276:18185-18192, 2001. (NIDDK, NIH¹)
- Yamano, S., Scott, D.E.¹, Huang, L.Y.¹, Mikolajczyk, M.¹, Pillemer, S.R., Chiorini, J.A., Golding, B.¹ and Baum, B.J. Protection from experimental endotoxemia by a recombinant adeno-associated virus encoding interleukin 10. *J. Gene Med.* 3:450-457, 2001. (CBER, FDA¹)
- Aframian, D.J., Redman, R.S.¹, Yamano, S., Nikolovski, J.², Cukierman, E., Yamada, K.M., Kriete, M.F., Swain, W.D., Mooney, D.J.² and Baum, B.J. Tissue compatibility of two biodegradable tubular scaffolds implanted adjacent to skin or buccal mucosa in mice. *Tissue Engineering* (in press). (Washington VAMC¹, University of Michigan²)
- Yamano, S. Huang, L.Y.¹, Ding, C.², Chiorini, J.A., Goldsmith, C.M., Wellner, R.B., Golding, B.¹, Kotin, R.M.², Scott, D.E.¹ and Baum, B.J. Recombinant adeno-associated virus serotype 2 vectors mediate stable interleukin 10 secretion from salivary glands into the bloodstream. *Human Gene Ther.* 13:287-298, 2002. (CBER, FDA¹, NHLBI, NIH²)
- Atkinson, J.C.¹ and Baum, B.J. Salivary enhancement: current status and future therapies. *J. Dent. Educ.* 65:1096-1101, 2001. (University of Maryland¹)

Indu Ambudkar, Ph.D.

- Singh, B.B., Zheng, C., Liu, X., Lockwich, T.P., Liao, D., Zhu, M.X., Birnbaumer, L., and Ambudkar, I.S. Trp1-dependent enhancement of salivary gland fluid secretion: role of store-operated calcium entry. *FASEB J.* 15, 1652-1654, (2001).

John A. Chiorini, Ph.D.

- S. Yamano, D.E. Scott, L.Y. Huang, M. Mikolajczyk, S.R. Pillemer, J.A. Chiorini, B. Golding, B.J. Baum. 2001 Protection from experimental endotoxemia by a recombinant adeno-associated virus encoding interleukin 10. *J Gene Med.* Sep-Oct;3(5):450-7. (CBER, FDA)
- N. Kaludov, K. E. Brown, R.W. Walters, J. Zabner, and J. A. Chiorini. 2001 AAV4 and AAV5 Both Require Sialic Acid Binding for Hemagglutination and Efficient Transduction but Differ in Sialic Acid Linkage Specificity. *J. Virol.* Vol. 75(15) 6884-6893. (University of Iowa, NHLBI).

R.W. Walters, S. Yi, S. Keshavjee, K.E. Brown, M.J. Welsh, J.A. Chiorini, J. Zabner. 2001. Binding of Adeno-associated virus type 5 to 2,3-linked sialic acid is required for gene transfer. *J Biol Chem.* Vol. 276(23) 20610-20616. (University of Iowa, NHLBI).

Stanley Pillemer, M.D.

- Jacobsson LT, Turesson C, Hanson RL, Pillemer S, Sievers ML, Pettitt DJ, Bennett PH, Knowler WC. Joint swelling as a predictor of death from cardiovascular disease in a population study of Pima Indians. *Arthritis Rheum.* 2001 May;44(5):1170-6.
- Pillemer SR, Matteson EL, Jacobsson LT, Martens PB, Melton LJ 3rd, O'Fallon WM, Fox PC. Incidence of physician-diagnosed primary Sjogren syndrome in residents of Olmsted County, Minnesota. *Mayo Clin Proc.* 2001 Jun;76(6):593-9.
- Brennan MT, Pillemer SR, Goldbach-Mansky R, Kleiner D, El-Gabalawy H, Fox PC. Focal sialadenitis in patients with early synovitis. *Clin Exp Rheumatol* 2001; 19: (4) 444-446.
- Yamano S, Scott DE, Huang L-Y, Mikolajczyk M, Pillemer SR, Chiorini JA, Golding B, Baum BJ. Protection from experimental endotoxemia by a recombinant adeno-associated virus encoding IL-10. *J. Gene Med* 2001; 3:1-9.
- Brennan MT, Sankar V, Baccaglini L, Pillemer SR, Kingman A, Nunez O, Young NS, Atkinson JC. Oral manifestations in patients with aplastic anemia. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2001 Nov;92(5):503-8.
- Bowman SJ, Pillemer S, Jonsson R, Asmussen K, Vitali C, Manthorpe R, Sutcliffe N. Revisiting Sjögren's syndrome in the new millennium: perspectives on assessment and outcome measures. *Rheumatology* 2001;40:1180-1188.
- Pendarvis WT, Pillemer, SR. Widespread Pain and Sjögren's syndrome. *J. Rheumatol* 2001; 28(12):2657-9
- Ship, JA, Pillemer SR, Baum, BJ. Xerostomia and the Geriatric Patient. *JAGS* 2001; (In press).
- Brennan MT, Sankar V, Leakan RA, Kleiner D, Atkinson JC, Wilkinson WE, Baum BJ, Pillemer SR. Risk Factors for a Positive Minor Salivary Gland Biopsy in Sjögren's Syndrome and Dry Mouth Patients (In press).
- Vitali C, Bombardieri S, Jonsson S, Moutsopoulos HM, Alexander EL, Carsons SE, Daniels TE, Fox PC, Fox R, Kassan SS, Pillemer SR, Talal N, Weisman MH, and the European Study Group on Classification Criteria for Sjögren's Syndrome. Classification Criteria for Sjögren's Syndrome: A Revised Version of the European Criteria proposed by the American-European Consensus Group (In press).
- Radfar L, Kleiner DE, Fox PC, Pillemer SR: Prevalence and clinical significance of lymphocytic foci in minor salivary glands of healthy volunteers. (In press).

10. Other

Bruce J. Baum, D.M.D., Ph.D.

Recipient of Visiting Fellowship from the Japanese Society for the Promotion of Science for the 2001-2002 academic year

Indu Ambudkar, Ph.D.

2001 Summer: mentored one student (NIDCR Dental Student Awardee).

2001 Fall: mentored one Colgate University Study Group student.

Stanley Pillemer, M.D.

Initiated collaboration on Sjögren's syndrome with Arena Pharmaceuticals, Inc, San Diego, CA

Collaborator on research grant (AR46016-01) held by Dr. Patricia Deuster, Uniformed Services University of the Health Sciences: Exercise Induced Changes in HPA Activity in Fibromyalgia.

Oral Infection and Immunity Branch

Oral Infection and Immunity Branch

1. Invited Talks

WanJun Chen, M.D.

“A Critical Role of Cell Surface Associated TGF- β in CD4+CD25+ T cell mediated immunosuppression”, NIH Immunology Interest Group Retreat, Airlie Center, Virginia, October, 2001

“TGF- β and T cell apoptosis”, Department of Microbiology and Immunology, Wake Forest University Medical School, North Carolina, August, 2001

John O. Cisar, Ph.D.

“Lectin-like Adhesins of Viridans Group Streptococci”, Department of Microbiology, The Nippon Dental University, Tokyo, Japan, June, 2001

Paul Kolenbrander, Ph.D.

“Community Architecture of Human Oral Bacterial Biofilms”, University of California at Berkeley, Berkeley, California, February, 2001

Bacterial Communication and Community Architecture in Oral Biofilms”, NIH Lambda Lunch Seminar, Bethesda, Maryland, March, 2001

“Human Oral Biofilms Adhere Today”, NIH-NASA Astrobiology Symposium, NIH, Bethesda, Maryland, April, 2001

“Community Structure of Oral Biofilms, University of Umea, Umea, Sweden, June, 2001

“Bacterial Community Organization of Human Oral Biofilms” Osaka University Graduate School of Dentistry, Osaka, Japan, June, 2001

“Saliva-Pellicle-Bacterium Interactions: The Initial Dynamics of Oral Biofilm Formation” Symposium and “Saliva-Induced Gene Expression in Oral Bacteria” at the International Association of Dental Research, Chiba, Japan, June, 2001

“Microbial Genomics and Periodontal Disease” and “Differential Display Analysis for Microbial Genomics” at the International Association for Dental Research, Chiba, Japan, June, 2001.

“Multispecies Communities in Biofilms: Oral Microbiology 325 Years After Antony van Leeuwenhoek”, International Symposium on Microbial Ecology, Amsterdam, The Netherlands, August, 2001

“Coaggregation and Coadherence Among Human Oral Bacteria”, Symposium on Microbial Adhesion and Infection, University of Groningen, The Netherlands, September, 2001

“Bacterial Community Organization of Human Oral Biofilms”, Johannes Gutenberg-University of Mainz, Mainz, Germany, September, 2001

“Community Organization and Gene Expression in Oral Bacterial Biofilms”, German Society for Microbiology and Hygiene (DGHM), Aachen, Germany, September, 2001

“Metabolic Communication and Cellular Interactions in Biofilms of Oral Bacteria”, Institute for Microbiology and Hygiene, Charite Hospital, Humbolt University of Berlin, Berlin, Germany, October, 2001

“Metabolic Communication and Cellular Interactions in Biofilms of Oral Bacteria”, University of Southern California, October, 2001

“Mutualism and Independence: Metabolic Strategies in Oral Bacterial Biofilms, Beneficial Microbial Workshop, Seattle, WA, October, 2001

Shihui Liu, Ph.D.

“Targeting of tumor cells by cell-surface urokinase plasminogen activator-dependent anthrax toxin”, Laboratory of Molecular Biology, NCI, November, 2001

Nancy McCartney-Francis, Ph.D.

“Enhanced Expression of Toll-Like Receptor TLR4 and Endotoxin Hypersensitivity in Mice Lacking a Functional TGF- β Signaling Pathway”, Annual Meeting of American Association of Immunologists, Orlando, Florida, April, 2001

“Unregulated Signaling Pathways in TGF- β 1 Deficient Mice”, Invited Speaker, Society for Leukocyte Biology, Maui, Hawaii, November, 2001

Mahtab Moayeri, Ph.D.

“Responses of the macrophage to lethal toxin”, 4th International Anthrax Conference, Annapolis, Maryland, June, 2001

Abner Notkins, M.D.

Grand Rounds: University of Maryland Medical School, 2001 Lecture on Autoantibodies as Predictors of Disease”, NIH Research Festival, 2001

Nicholas J. P. Ryba, Ph.D.

“Chemosensory Receptors: The First Decade”; The Banbury Center, Cold Spring Harbor Laboratory, March, 2001

Mark A. Hoon, Ph.D.

“Chemical Senses”, Gordon Conference: Rhode Island, July, 2001

Sharon M. Wahl, Ph.D.

“Mucosal Infection and Immunity: Division of Intramural Research Perspective” National Advisory Dental and Craniofacial Research Council, NIH, Bethesda, MD, 2001

“Macrophage Contribution to HIV Pathogenesis”, Keystone Symposium on Macrophage Activation and Deactivation: Links Between Innate and Acquired Immunity, Keystone, CO, January, 2001

“State-of-the-Art Review: Th2/Anti-inflammatory cytokines”, First Annual Workshop on Immunogenetic Mechanisms of Intestinal Inflammation: Role of Cytokines and Chemokines, University of Virginia, Charlottesville, VA

“Secretory Leukocyte Protease Inhibitor-A new life for an old molecule”, Johnson and Johnson Wound Healing Technology Center, Stillman, NJ.

“HIV-Induced Gene Expression as Therapeutic Targets”, PPD Discovery, San Jose, CA

“Cytokine Modulation as Therapy for Hepatic Immunopathology and Fibrosis”, Falk Symposium, Hannover, Germany, October, 2001

2. Sessions Chaired at Professional Meetings

Stephen H. Leppla, Ph.D.

Session Convener, “Molecular Interactions of Anthrax Proteins”, 4th International Anthrax Conference, Annapolis, Maryland, June, 2001

Abner Notkins, M.D.

Symposium on Autoimmune Diseases: 2001 NIH Research Festival

Sharon M. Wahl, Ph.D.

Co-chair, Cytokines in Tolerance, Autoimmunity and Inflammation; NIH Cytokine Interest Group Symposium, NIH, Bethesda, Maryland

Co-chair, Session on Biochemical and Cellular Aspects of Tissue Repair and Remodeling. Tissue Repair and Wound healing: Therapeutic Opportunities.

Smithkline Beecham, King of Prussia, PA

Symposium Chair, “Macrophages”, Society of Leukocyte Biology Annual Meeting, Cambridge, MA

Co-chair, Th2/Anti-inflammatory cytokines”, First Annual Workshop on Immunogenetic Mechanisms of Intestinal Inflammation: Role of Cytokines and Chemokines, University of Virginia, Charlottesville, VA

3. Symposia, Meetings, or Conferences Organized

Paul Kolenbrander, Ph.D.

“Microbial Communities: Advantages of Multicellular Cooperation” for The American Academy of Microbiology, Steering Committee Member for organizing colloquium “Multispecies Communities in Biofilms: Oral Microbiology 325 Years After Antony van Leeuwenhoek” at the International Symposium on Microbial, Amsterdam, The Netherlands

Stephen H. Leppla, Ph.D.

Organizing Committee, 4th International Conference, Annapolis, MD, June 2001

Abner Notkins, M.D.

Symposia on Autoimmune Diseases: 2001 NIH Research Festival

Reuben P. Siraganian, M.D., Ph.D.

Organizing Committee, Fourth International Workshop on Signal Transduction in the Activation and Development of Mast cells and Basophils, Rehovoth, Israel (moved to NIH)

4. Consultant for Universities or Industries

John O. Cisar, Ph.D.

R01 DE11102-06: Molecular Analysis of *Actinomyces fimbriae*

P.I.: Dr. Stephen Mattingly, Department of Microbiology, University of Texas Health Science Center at San Antonio

UO1 DE 13971-01: The whole genome sequence of *Actinomyces naseslundii*, P.I.: Timothy Read, The Institute for Genomic Research, Rockville, Maryland

John Thompson, Ph.D.

Consultant, Protein Structure Laboratory, University of York, England: Drs. Gideon Davies and Annabelle Varrot. Provision of highly purified enzymes (cellobiose-6-phosphate hydrolase, sucrose-6-phosphate hydrolase and phospho- α -glucosidase) for crystallization attempts and X-ray structural analysis.

Consultant, Chemistry Department, University of British Columbia, Canada:

Professor Stephen Withers, provision of phosphorylated disaccharides and purified β -glucoside kinase for enzymatic analyses.

Consultant, Department of Organic Chemistry, University of Darmstadt, Germany: Professor Frieder Lichtenthaler and Dr. Stefan Immel, provision of enzymatically synthesized phospho- α and phospho- β -glucosides for NMR and molecular dynamics analysis.

Consultant, Department of Biochemistry and Molecular Biology, Penn State University: Dr. Jean Brenchley, provision of chromogenic substrates for enzymatic analyses of phospho-disaccharide hydrolases.

Consultant, Centre Nationale de Recherche Scientifique (CNRS), Marseilles, France: Dr. Bernard Henrissat, consultation and sequence analysis of Family 4 Glycosylhydrolases.

Consultant, Department of Applied Biology, Shinshu University, Japan: Professor Junichi Sekiguchi and Dr. Hiroko Yamamoto, assistance and consultation during cloning, sequencing and regulatory analysis of the *mal*-PTS operon of *Bacillus subtilis*.

Consultant, Biology Department, University of Rochester, NY: Dr. Barry G. Hall, consultation and provision of chromogenic substrates for characterization of phospho- β -glucosylhydrolases, including cellobiose-6-phosphate hydrolase from *Escherichia coli*.

Sharon M. Wahl, Ph.D.

Adjunct Professor, Department of Molecular Microbiology and Immunology, Johns Hopkins University, Baltimore, MD

Adjunct Professor, Department of Periodontics, University of Maryland Dental School, Baltimore, Maryland

Scientific and Medical Advisory Board

Canadian Arthritis Network, Toronto, Canada

Consultant, Alkermes Applied Biology Research, Cambridge, MA

Consultant, "TGF- β in Wound Repair", Genzyme Inc., Cambridge, MA

Consultant, “HIV-Induced Gene Expression as Therapeutic Targets”, PPD
Discovery, San Jose, CA

5. Elected Offices

Sharon M. Wahl, Ph.D.

Board of Directors, Foundation for Advanced Education in the Sciences (FAES)
Past-President, Society for Leukocyte Biology
Secretary, FAES Executive Board

6. Editorial Responsibilities Other than Reviewing Manuscripts

Nancy McCartney-Francis, Ph.D.

Member, Editorial Board, Experimental Biology and Medicine

Nicholas J.P. Ryba, Ph.D.

Editorial Board, Biochemical Journal

Reuben P. Siraganian, M.D., Ph.D.

Editorial Advisor Committee, International Allergology

Sharon M. Wahl, Ph.D.

Editorial Board, Cytokine and Growth Factor Reviews

Editorial Board, Wound Repair and Regeneration

Board of Editors, American Journal of Pathology

Advisory Editor, Journal of Experimental Medicine

Editorial Board, Cytokine and Growth Factor Reviews

Editor, Microbes and Infection Special Volume on “TGF- β in the Evolution and Resolution of Inflammatory Processes”

Co-Editor, Progress in Inflammation, Special Volume on “TGF- β and Related Cytokines” Birkhauser Press

7. Professional or Governmental Advisory Capacity

Paul Kolenbrander, Ph.D.

Grant Review: Health Research Council of New Zealand

Grant Review: Medical Research Council of Canada

Chairperson, Cellular Imaging Core Facility Oversight Committee

Scientific reviewer for Institutional Review Board

Invited consultant for NIDCR DER FY2003 Biofilm Initiative, April, 2001

Stephen Leppla, Ph.D.

Member, NIAID Working Group on Anthrax Vaccines

Member, ad hoc NIAID Review Panel for proposals received in reply to RFA entitled “Preparedness against illegitimate use of bacterial pathogens”

Member, Ad Hoc Recombinant Toxin Working Group, advisory to the Office of Biotechnology Activities, NIH (formerly, the "RAC" committee)

Abner Notkins, M.D.

Scientific Advisory Council, March of Dimes, 2001

Board of Directors, The Paul Ehrlich Foundation, Frankfurt, Germany, 2001

NIH Alumni Association, 2001

Board of Governors, New York University, Alumni Medical Association, 2001

Association of American Physicians, 2001

Fellow, American Association for the Advancement of Sciences, 2001

Nicholas J. P. Ryba, Ph.D.

Reviewer, NIDCD initiative: "Mechanisms Underlying the Innervation of Specific Taste Receptor Cells"

Grant Reviewer for BARD, the United States – Israel Bi-national Agricultural Research & Development Fund

Reuben P. Siraganian, M.D., Ph.D.

Ad hoc reviewer for Israel Research Council, Israel

Distinguish lecture, "Syk in mast cell signal transduction", Fourth International Workshop on Signal Transduction in the Activation and Development of Mast cells and Basophils.

Sharon M. Wahl, Ph.D.

Howard Hughes Medical Institute Program Committee

Scientific and Medical Advisory Committee, Canadian Arthritis Network

Advisory Council, Meharry Medical College, Regional Research Centers for Minority Oral Health

Fellow, American Association for the Advancement of Science

Board of Directors, Foundation for Advanced Education in the Sciences

Office of AIDS Research (OAR) Etiology and Pathogenesis Coordinating Committee, NIH

Member, Appointed by NIH Director, Stetten Museum of Medical Research Advisory Committee

8. Appeared as an Invited Expert

Paul Kolenbrander, Ph.D.

External Examiner, Ph.D. Thesis Committee, University of Umea, Sweden, June, 2001

External Examiner, Ph.D., Thesis Committee, University of Groningen, The Netherlands, September, 2001

Nicholas J.P. Ryba, Ph.D.

Interviewed for a various articles on the identification of sweet taste receptors.

9. Professional Publications with Outside Co-authors

John O. Cisar, Ph.D.

- Takahashi Y, Konishi, K, Cisar, JO, and Yoshikawa, M: Identification and Characterization of *hsa*, the gene encoding the sialic acid-binding adhesin of *Streptococcus gordonii* DL1. *Infect. Immun.*, 70:1209-1218, 2001
- Takahashi Y, Ruhl S, Yoon J-W, Sandberg AL, and Cisar JO: Adhesion of Viridans Group Streptococci to sialic Acid-, Galactose- and N-acetylgalactosamine-Containing Receptors. *Oral Microbiol. Immunol.*, In Press. 2002
- Xu D-Q, Cisar JO, Ambulos N, Burr, DH and Kopecko DJ: Molecular Cloning and Characterization of Genes for Shigella sonnei form IO-polysaccharide: proposed biosynthetic pathway and stable expression in a live Salmonella vaccine vector. *Infect. Immun.*, Accepted. 2002

Paul Kolenbrander, Ph.D.

- Palmer RJ Jr, Wu R, Gordon S, ¹Bloomquist CG, ¹Liljemark WF, ²Kilian M and Kolenbrander PE: Retrieval of biofilms from the oral cavity. In: Microbial growth in biofilms, part B, *Methods in Enzymology*, vol 337 (R.J. Doyle, ed.) Academic Press, Inc., San Diego, California 2001 (¹University of Minneapolis, MN; ²University of Aarhus, Aarhus, Denmark)
- Palmer RJ Jr, Kazmerzak K, ¹Hansen MC and Kolenbrander PE: Mutualism versus independence: strategies of mixed-species oral biofilms in vitro using saliva as the sole nutrient source. *Infect. Immun.* 69:5794-5804, 2001 (¹Technical University of Denmark, Lyngby, Denmark)
- ¹Rogers JD, Palmer RJ Jr, Kolenbrander PE, and ¹Scannapieco, FA: FA: Role of *Streptococcus gordonii* amylase-binding protein A in adhesion to hydroxyapatite, starch metabolism and biofilm formation. *Infect. Immun.* 69:7046-7056. ¹SUNY at Buffalo, Buffalo, NY 2001
- Egland PE, ¹Du LD and Kolenbrander, PE: Identification of Independent *Streptococcus gordonii* SspA and SspB functions in coaggregation with *Actinomyces naeslundii*. *Infect. Immun.* 69:7512-7516 (¹Colgate-Palmolive Co., Piscataway, NJ) 2001

Stephen H. Leppla, Ph.D.

- Duesbery NS, Resau J, Webb CP, Koochekpour S, Koo HM, Leppla SH, and Vande Woude GF: Suppression of ras-mediated transformation and inhibition of tumor growth and angiogenesis by anthrax lethal factor, a proteolytic inhibitor of multiple MEK pathways. *Proc. Natl. Sci.*, 98:4089-4094, 2001
- Price BM, Liner AL, Park S, Leppla SH, Mateczun A, and Galloway DR: Protection against lethal anthrax toxin challenge by genetic immunization with a plasmid encoding the lethal factor protein. *Infection. Immun.*, 69:4509-4515, 2001

Moriya O, Matsui M, Osorio M, Miyazawa H, Rice CM, Feinstone SM, Leppla SH, Keith JM and Akatsuka T: Induction of hepatitis C virus-specific cytotoxic T lymphocytes in mice by immunization with dendritic cells treated with an anthrax toxin fusion protein. *Vaccine*, 2941:1-8, 2001

Pannifer A, Wong TY, Schwarzenbacher R, Renatus M, Petosa C, Bienkowska J, Lacy DB, Collier RJ, Park S, Leppla SH, Hanna P and Liddington RC: Crystal Structure of the Anthrax Lethal Factor. *Nature* 414:229-233, 2001

Abner Notkins, M.D.

- Cai T, ²Krause MW, ³Odenwald WF, ⁴Toyama R: The IA-2 Gene Family: Homologs in *Caenorhabditis Elegans*, *Drosophila* and Zebra Fish. *Diabetologia*, 44:81-88, (²Section on Developmental Biology, Laboratory of Molecular Biology, National Institute of Diabetes, Digestive and Kidney Diseases, NIH, Bethesda, MD, ³The Neurogenetics Unit, ⁴Laboratory of Neurochemistry, National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD, Laboratory of Molecular Genetics, ⁴National Institute of Child Health and Human Development, NIH, Bethesda, Maryland, 2001
- ¹Hanlon CA, ¹DeMattos CA, ¹DeMattos CC, ¹Niezgoda M, ²Hooper DC, ²Koprowski H, Notkins AL, ¹Rupprecht CE: Experimental Utility of Rabies Virus Neutralizing Human Monoclonal Antibodies in Post-Exposure Prophylaxis. *Vaccine*, 19:3834-3842, (¹Centers for Disease Control and Prevention, Rabies Section, Atlanta, GA, ²Thomas University, Center For Neurovirology, Philadelphia, PA, 2001
- Cai T, Xie J, ²She J-X and Notkins AL: Analysis of the Coding and Promoter Regions of the Autoantigen IA-2 in Subjects and without Autoantibodies to IA-2. *Diabetes*, 50:2406-2409, (²Department of Pathology, University of Florida, Gainesville, Florida), 2001
- ¹Kudva YC, Deng Y-J, ¹Govindraj R, ¹Abraham RS, ¹Marietta EV, Notkins AL, and ¹David CS: HLA-DQ8 Transgenic and NOD Mice Recognize Different Epitopes Within the Cytoplasmic Region of the Tyrosine Phosphatase-Like Molecule, IA-2. *Human Immunology*, 62:1099-1105 (¹Division of Endocrinology, Metabolism and Nutrition, Mayo Clinic, Rochester, MN), 2001
- ¹Leslie D, ²Lipsky P and Notkins AL: Autoantibodies of Predictors of Disease. *The Journal of Clinical Investigation*, 108:1417-1422 (¹Department of Diabetes and Metabolism, St. Bartholomew's Hospital, London, United Kingdom, ²National Institute of Arthritis and Musculoskeletal and Skin Disease, Bethesda, MD.
- Notkins AL and ²Lernmark A: Autoimmune Type 1 Diabetes: Resolved and Unresolved Issues. *The Journal of Clinical Investigations*, 108:1247-1252, (²Department of Medicine, Robert H. Williams Laboratory, University of Washington, Seattle, Washington) 2001

Nicholas J .P. Ryba, Ph.D.

¹Martini S, Silvotti L, ¹Shirazi A, Ryba N JP and Tirindelli R: Co-expression of putative pheromone receptors in the sensory neurons of the vomeronasal organ. *J Neurosci.*21:843-48 (Istituto di Fisiologia Umana, Università di Parma, I-43100 Parma, Italy) 2001

¹Nelson G, Hoon MA, Chandrashekar J, Zhang Y, Ryba NJP, and Zuker CS: Mammalian sweet taste receptors. *Cell* 106:381-390. (¹Howard Hughes Medical Institute and Departments of Biology and Neurosciences, University of California at San Diego, La Jolla, CA) 2001

Reuben P. Siraganian, M.D., Ph.D.

Hong-Geller E, Holowka D, Siraganian RP, Baird B, Cerione RA: Activated Cdc42/Rac reconstitutes FcεRI-mediated Ca²⁺ mobilization and degranulation in mutant RBL mast cells. *Proceedings of the National Academy of Sciences of USA* 98:1154-1159, 2001

Kalesnikoff J, Huber M, Lam V, Damen JE, Zhang J, Siraganian RP and Krystal G: Monomeric IgE stimulates signaling pathways in mast cells that lead to cytokine production and cell survival. *Immunity* 14:801-811, 2001

John Thompson, Ph.D.

Thompson J, Robrish SA, Pikis A, Brust A and Lichtenthaler FW: Phosphorylation and metabolism of sucrose and its five linkage-isomeric α-D-glucosyl-D-fructoses by *Klebsiella Pneumoniae*. *Carbohydr. Res.* 331: 149-161. 2001

Yamanoto H, Serizawa M, Thompson J, and Sekiguchi J: Regulation of the glv operon in *Bacillus subtilis*: Yfia (GlvR) is a positive regulator of the operon that is repressed through CcpA and cre. *J. Bacteriol.* 183:5110-5121

Thompson J, Robrish SA, Immel S, Lichtenthaler FW, Hall BG, and Pikis A: Metabolism of sucrose and its five linkage-isomeric α-D-glycosyl-D-fructoses by *Klebsiella pneumoniae*. Participation and properties of sucrose-6-phosphate hydrolase and phospho-α-glucosidase. *J. Biol. Chem.*, 276:37415-37425, 2001

Sharon M. Wahl, Ph.D.

Smith PD, Smythies LE and Wahl SM: Macrophage effector function. In: *Clinical Immunology Principles and Practice*, 2nd Edition (Rich RR, Fleisher TA, Botzin B, Shearer WT and Schroeder HW Jr., eds.) Moby, London 19.11-19.9. 2001

Breit SN, and Wahl SM: Introduction. In: *TFG-β and Related Cytokines in Inflammation, Prog. Inflam. Res.* (Breit SN and Wahl SM, eds.) Birkhauser, Basel. Pp. 1-3. 2001

Breit SN and Wahl SM: TGF-β superfamily members: structure and function. *Prog. Inflam. Res.* In press, (Center for Immunology, Sydney, Australia)

Wahl SM, Chan J, Burstein H and Song X-y: Cytokine modulation in the therapy of hepatic immunopathology and fibrosis. In: *Cytokines in Liver*

Injury and Repair. Kluwer Academic Publishers, Lancaster, PA; in press. 2002

Hale-Donze H, Greenwell-Wild T, Mizel D, Doherty TM, Delphi C, Orenstein JM and Wahl SM: *Mycobacterium avium* complex (MAC) promotes recruitment of monocyte hosts for HIV-1 and bacteria. *J Immunol*. In press. 2002

Hale-Donze H, ¹Jackson R and Wahl SM: Quantification of transforming growth factor β isoforms. In: *Current Protocols in Immunology* (Kruisbeck AM, Margulies DH, Shevach EM and Strobell W, eds) Greene Publishing Associates and Wiley Interscience, Philadelphia. 2000 (¹University of Alabama, School of Medicine, Birmingham, AL)

10. Other

John O. Cisar, Ph.D.

Vaccine for Protection Against *Shigella sonnei* Disease, US Provisional Patent Application Filed: January 16, 2002, Inventors: Kopecko DJ, Xu D-Q and Cisar, JO.

Paul E. Kolenbrander, Ph.D.

Mentor of summer dental students: Angeline Chan, New York University and Aaron Burleson, University of South Carolina, Charleston, South Carolina
Invited to write a review entitled "Oral Bacteria-Host Interactions and Biofilm Communities" for *Microbiology and Molecular Biology Reviews*
Invited to present seminar to the Lake George, New York Greater Community as apart of the Darrin Fresh Water Institute's Lake George Summer Seminar Program for Community Continuing Education, Bolton Landing, NY, August 2001
CRADA entitled "Analysis of Human Dental Plaque and Development of Therapeutic Interventions" with Warner-Lambert/Pfizer.

Stephen H. Leppla, Ph.D.

Supplied *Bacillus anthracis* strains, anthrax toxin components, antisera, cloned genes, or mutant cultured cells to approximately thirty-three laboratories outside the NIDCR.

Nancy McCartney-Francis, Ph.D.

Member, Publications Committee, Society for Leukocyte Biology

Reuben P. Siraganian, M.D., Ph.D.

Antibodies, plasmids or cell lines were provided to the following:
Dr. Marc Benhamou, Institut Pasteur, Paris, France
Dr. Fedor Berditshevski, University of Birmingham, Birmingham, UK
Dr. Amanda Fensome-Green, University College-London, London, UK
Dr. Raymond Frade, Hospital Saint-Antoine, Paris, France
Dr. Takeshi Kono, Nippon Boehringer Ingelheim, Japan

Dr. Stephen Kraft, Beth-Israel Hospital, Harvard Medical School, Boston, MA
Dr. Graham Packard, CRC Wessex Medical Oncology Unit, Southampton, UK
Dr. Richard Stevens, Brigham and Women's Hospital, Boston, MA

Sharon M. Wahl, Ph.D.

Provided SLPI null mice to national and international laboratories

Oral and Pharyngeal Cancer Branch

Oral and Pharyngeal Cancer Branch

1. Invited Talks

J. Silvio Gutkind, Ph.D.

University of Kumamoto, "A MAP Kinase signaling network links G protein-coupled receptors to the nucleus", Kumamoto, Japan, January 2001
Endothelome Conference, "Regulation of VEGF expression by the Kaposi's Sarcoma Virus G protein-coupled receptor" Kumamoto, Japan, January 2001
Thammasat University, "Genomic Approaches to Understand Oral Cancer" Bangkok, Thailand, January 2001
Picower Institute, "Regulation of Signaling Networks by G-Protein Coupled Receptors", New York, NY, March 2001
Chiron Co, "Regulation of Signaling Networks by G-Protein Coupled Receptors", Emeryville, CA, March 2001
G Protein Signaling Workshop, "Signaling networks in cell growth control by G protein", New York, NY, April 2001
Symposium on Oral Cancer, World Congress on Preventive Dentistry, "Genomic Approaches to Understand Oral Cancer", Beijing, China, April 2001
Virginia Commonwealth University, Massey Cancer Center, "Molecular Mechanisms in Signal Transduction and Squamous Carcinogenesis", Richmond, VA, May 2001
Van Andel Research Institute, "Signaling from transforming serpentine receptors to the nucleus and beyond", Grand Rapids, MI, June 2001
FASEB Summer Research Conference, "Lysophospholipids and Related Bioactive Lipids in Biology and Diseases", Tucson, Arizona, June 2001
International University Menendez Pelayo, "Tobacco and Alcohol: Their impact on Oral Cancer", Santander, Spain, July 2001
Gordon Research Conference, CRC Mechanisms of Cell Signaling, "A novel family of RhoGEFs links serpentine receptors to Rho", Oxford, UK, August 2001
Chilean Society of Biochemistry and Molecular Biology, Annual Meeting, "Signal transduction from the membrane to the nucleus: New Molecular mechanisms", Concepcion, Chile, September 2001
2001 Symposium II Novel Molecular Targets for Cancer Therapy, "Signaling Opportunities for Cancer Therapy" Buenos Aires, Argentina, October 2001
Georgetown University, "Regulation of Signaling Networks by G Protein-Coupled Receptors" Washington, DC, November 2001

Thomas Bugge, Ph.D.

Novo/Nordisk A/S, Maaloev, Denmark. "Fibrinogen is an important determinant of the metastatic potential of circulation tumor cells" February 2001
Second General Meeting of the International Proteolysis Society, "Tumor Invasion and Metastasis", Munich, Germany, November 2001

Adrian Senderowicz, M.D.

Grand Rounds, VA Washington Hospital, Washington, DC "Cyclin-dependent kinase modulators for the treatment of head and neck neoplasms", January 2001
First International "North Adriatic Sea" Symposium on Novel Targets for cancer Therapy. "Novel cdk inhibitors for cancer therapy". Trieste, Italy. March 2001
University of Central Florida. "Impact of the sequence of human genome of novel therapeutics". Orlando, Florida, April 2001
Internal Medicine Grand Rounds, Cornell University, New York Hospital. "Cyclin-dependent kinase inhibitors for cancer therapy", New York, NY, May 2001
Internal Medicine Grand Rounds, Fred Hutchinson Cancer Research Center, "Development cyclin-dependent kinase inhibitors for cancer therapy", Seattle, WA June 2001
MD Anderson Cancer Center, Smithville, Texas, "Novel Cyclin dependent kinase inhibitors as chemopreventive agents", 8/2001
Second Novel Molecular Targets for Cancer Therapy, Buenos Aires, Argentina. "Novel modalities and targets for the treatment of head and neck cancer", Buenos Aires, Argentina. October 2001
AstraZeneca Cancer Research Colloquium, Boston, MA: "Clinical development of cyclin-dependent kinase inhibitors". October 2001.

2. Sessions Chaired at Professional Meetings

Thomas Bugge, Ph.D.

Session Chair, Proteolysis in Cancer, "The second Meeting of the International Proteolysis Society", Munich, Germany, November 2001

Adrian Senderowicz, M.D.

Chairperson, Symposium, "Second Novel Molecular Targets for Cancer Therapy", Seminar: novel cyclin-dependent kinase inhibitors for cancer therapy, Buenos Aires, Argentina, October 2001
First International "North Adriatic Sea" Symposium on Novel Targets for cancer Therapy. "Novel cdk inhibitors for cancer therapy". Trieste, Italy, March 2001

3. Symposia, Meetings, or Conferences Organized

Adrian Senderowicz, M.D.

2001 Novel II Molecular Targets for Cancer Therapy, Buenos Aires, Argentina, October 2001

Thomas Bugge, Ph.D.

Scientific Advisory Board, "The second Meeting of the International Proteolysis Society", Munich, Germany, November 2001

4. Consultant for Universities or Industries

Frank, Robey, Ph.D.

Consultant, Biological Consulting Group, Arlington, VA

5. Elected Offices

6. Editorial Responsibilities Other than Reviewing Manuscripts

J. Silvio Gutkind, Ph.D.

Editorial Board, *The Journal of Biological Chemistry*

Editorial Board, *Biochemical Journal*

Editorial Board, *Oral Oncology*

Editor, *Humana Press*, Book on Signaling Networks and Cell Cycle Control

In preparation, *Academic Press*, Book on Head and Neck Carcinomas

Myung Hee Park, Ph.D.

Editorial Board, Archives of Pharmacal Research

Adrian Senderowicz, M.D.

Editorial Board, Clinical Cancer Research

Editorial Board, The Women's Review Oncology Review

Editorial Board, Investigational New Drugs

7. Professional or Governmental Advisory Capacity

J. Silvio Gutkind, Ph.D.

Reviewer, Grant Program, DER, NCI

Reviewer, Wellcome Trust Foundation

Reviewer, Italian Association for Scientific Research

Reviewer, German-Israeli Foundation for Scientific Research & Development

Reviewer, Swiss National Science Foundation

Reviewer, Medical Research Council of Canada

Reviewer, Dutch Cancer Society

Reviewer, National Science Foundation

Reviewer, The Israel Science Foundation

Reviewer, Italian Association for Cancer Research

Reviewer, European Institute of Oncology

Adrian Senderowicz, M.D.

Technical Evaluation Panel, MAO RFP NCI-CN-15000-46, Phase II Clinical Studies of Chemopreventive Agents, Division of Cancer Prevention, NCI

8. Appeared as an Invited Expert

9. Professional Publications with Outside Co-authors

J. Silvio Gutkind, Ph.D.

- Montaner S., Sodhi A., Pece S., Mesri E.A., and Gutkind J.S. The Kaposi's Sarcoma Associated Herpesvirus G Protein-Coupled Receptor promotes endothelial cell survival through the activation of Akt/PKB. *Cancer Res.*, 61:2641-2648, 2001
- Dong F., Gutkind J.S., and Lerner A.C.: Granulocyte colony-stimulating factor induces erk5 activation, which is differentially regulated by protein-tyrosine kinases and protein kinase C. Regulation of cell proliferation and survival. *J Biol Chem.* 276:10811-10816, 2001
- Yuan P.X., Huang L.D., Jiang Y.M., Gutkind J.S., Manji H.K., Chen G. The mood stabilizer valproic acid activates mitogen-activated protein kinases and promotes neurite growth. *J Biol Chem.* 276:31674-31683, 2001
- Longenecker K.L., Lewis M.E., Chikumi H., Gutkind J.S., Derewenda Z.S. Structure of the rgs-like domain from PDZ-RhoGEF linking heterotrimeric G protein-coupled signaling to Rho GTPases. *Structure* (Cell Press) 9:559-69, 2001
- Patel V., Leethanakul C., and Gutkind J.S. New Approaches for the understanding of the molecular basis of oral cancer. *Crit. Rev. Oral Med.* 12:55-63, 2001
- Sodhi A., Montaner S., Miyazaki H., Gutkind J.S., MAPK and Akt act cooperatively but independently on hypoxia inducible factor-1alpha in ras V12 upregulation of VEGF. *Biochem Biophys Res Commun.* 287:292-300, 2001
- Knezevic V., Leethanakul C., Bichsel V.E., Worth J.M., Pradhu V.V., Gutkind J.S., Liotta L.A., Munson P.J., Petricoin E.F.,^{3rd}, Krizman D.B., Proteomic profiling of the cancer microenvironment by antibody arrays. *Proteomics* 10:1271-8, 2001
- Orsulic S., Li Y., Soslow R.A., Vitale-Cross L.A., Gutkind J.S., and Varmus H.E. Induction of ovarian cancer by defined multiple genetic changes in a mouse model system. *Cancer Cell* (Cell Press), in press.
- Chikumi H., Fukuhara S., Gutkind JS. Regulation of G protein-linked guanine nucleotide exchange for Rho, PDZ-RhoGEF and LARG, by tyrosine phosphorylation: Evidence of a role for FAK. *J Biol Chem*, in press
- Todd R., Gutkind J.S., Shillitoe E.J., Wong D.T. Solid Tumors: Microarray analysis of oral cancers, in press.
- Machado de Sousa S.O., Mesquita R.A., Pinto Jr D.S., and Gutkind J.S. Immunolocalization of c-Fos and c-Jun in human oral mucosa and in oral squamous cell carcinoma. *J. Oral Pathol.*, in press.

Thomas Bugge, Ph.D.

- Bezerra J.A., Currier A.R., Melin-Aldana H., Sabla G., Bugge T.H., Kombrinck K.W., and Degen J.L. Plasminogen Activators Direct Reorganization of the Liver Lobule after Acute Injury. *Am. J. Pathol.*, 158, 921-929, 2001
- Engelholm L.H., Nielsen B.S., Netzel-Arnett S., Solberg S., Chen X.D., Lopez Garcia J.S., Lopez-Otin C., Young M., Birkedal-Hansen H., Danø K., Lund L.R., Behrendt N., and Bugge T.H. The urokinase plasminogen activator receptor-associated

protein/Endo 180 is coexpressed with its interaction partners uPAR and matrix metalloproteinase-13 during osteogenesis. *Lab Invest.* 10, 1403-1414, 2001

Adrian Senderowicz, M.D.

- Kahn M., Senderowicz A.M, Sausville E., Barret K. Possible mechanisms of diarrhea side-effects associated with the use of a novel chemotherapeutic agent, flavopiridol. *Clin Cancer Res.* Feb;7(2):343-9, 2001
- Sausville E.A., Arbuck S.G., Messmann R., Headlee D., Bauer K., Lush R., Murgo A., Figg W., Lahusen T., Jaken S., Jing X., Roberge M., Fuse E., Kuwabara T. and Senderowicz A.M. Phase I trial of 72-hour continuous infusion UCN-01 (7-hydroxystaurosporine) in patients with refractory neoplasms. *J Clin Oncol* Apr 15;19(8): 2319-33, 2001
- Hagenauer B., Salamon A., Thalhammer T., Kunert O., Haslinger E., Klinger P., Senderowicz A.M., Sausville E.A., and Jäger W. In vitro glucuronidation of the cyclin-dependent kinase inhibitor flavopiridol by rat and human liver microsomes: involvement of UDP-glucuronosyltransferases 1A1 and 1A9". *Drug Metab Dispos.* Apr;29(4 Pt 1):407-14, 2001
- Bachrich T., Thalhammer T., Jager W., Haslmayer P., Alihodzic B., Bakos S., Hitchman E., Senderowicz A.M., Penner E. Characterization of autoantibodies against uridine-diphosphate glucuronosyltransferase in patients with inflammatory liver diseases. *Hepatology* May;33(5):1053-9, 2001
- Politi P.M. and Senderowicz A.M. Report: First Symposium of Novel Molecular Targets for Cancer Therapy, Buenos Aires, Argentina. *The oncologist* 6(2): 207-12, 2001
- Wang C., Fu M., Mani S., Wadler S., Senderowicz A.M. and Pestell R. Histone acetylation and the cell cycle in cancer. *Frontiers in Bioscience* 6: d610-629, 2001
- Chen H., Bauer K., Senderowicz A.M., Messmann R., Headlee D., Arbuck S., Kuwabara T., Venzon D., Murgo A., Sausville E.A., Figg W. Incorporation of Alpha 1 acid glycoprotein binding affinity for predicting Pharmacokinetics of UCN-01, a novel anticancer agent. *Clin Pharmacol Ther* (in press)

10. Other

Frank Robey, Ph.D.

Adjunct Professor, Department of Molecular Biology and Biochemistry
George Washington University Medical School

Pain and Neurosensory
Mechanisms Branch

Pain and Neurosensory Mechanisms Branch

1. Invited Talks

Raymond Dionne, D.D.S., Ph.D.

"COX-2 and Analgesia" 4th International Workshop on COX-2, February 7, 2001, San Juan, PR

"Translating Scientific Opportunity into Improved Pain Relief" American Dental Society of Anesthesiology, April 28, 2001, Boston MA

"Molecules to Medicines" University of Washington, May 25, 2001, Seattle WA

"Analgesia and COX-2 Inhibition" July 25, Portofino Italy

"Translating Advances into Improved Pain Relief " American Institute of Oral Biology, October 21, Palm Springs CA

"Translating Advances into Improved Pain Relief" University of Southern California, October 23, Los Angeles CA

Michael Iadarola, Ph.D.

Invited speaker: "VR1 mediated calcium flux from ER and plasma membrane locations" Gene Therapy and Therapeutics Branch NIDCR, May 2001.

Invited Speaker: "Novel approaches to pain control using molecular neurolytics" presented at "Drug development and clinical trials for novel pain therapeutics" Washington DC, November 2001.

Mitchell Max, M.D.

Invited Keynote Speaker, McGill University Pain Symposium, Montreal, January, 2001.

Invited Speaker, NINDS Grand Rounds, Bethesda, February, 2001.

Invited Speaker, Johns Hopkins Blaustein Pain Conference, Baltimore, May, 2001.

Invited Discussant, Institute of Medicine Hearing on Pain and Palliative Care, Washington, DC, July, 2001.

Invited Speaker, University of Aarhus Department of Neurology, Aarhus, Denmark, August 2001.

Invited Speaker, University of Aalborg Pain Research Group, Aalborg, Denmark, August 2001.

Invited Speaker, University of Oslo Department of Anesthesia, Oslo, Norway, August 2001.

Invited Keynote Speaker, Wayne State University School Endowed Chair Inaugural, Detroit, September, 2001.

Invited Plenary Speaker, Eastern Pain Association Annual Meeting, New York, September, 2001.

Invited Speaker, Johns Hopkins Department of Neurology Grand Rounds, Baltimore, October, 2001.

Keynote Speaker, McGill University Pain Research Center Inaugural, Montreal, November, 2001

Invited Speaker, Rehabilitation Department Grand Rounds, Walter Reed Army Medical Center, Washington, DC, December, 2001.

2. Sessions Chaired at Professional Meetings

Raymond Dionne, D.D.S., Ph.D.

Analgesiology and Headache Section Workshop, American Society of Clinical Pharmacology, March 8, Orlando FL

3. Symposia, Meetings, or Conferences Organized

4. Consultant for Universities or Industries

Raymond Dionne, D.D.S., Ph.D.

Clinical Instructor, Department of Oral Health Care Delivery, University of Maryland Dental School
American Society for Clinical Pharmacology and Therapeutics, Vice-Chair, Analgesiology and Headache Section, 2001-2004

Mitchell Max, M.D.

Consultant on NIH grants at Johns Hopkins, Wake Forest University, University of Utah, University of Maryland
Consultant for Industries:
Bristol-Myers Squibb
Dov Pharmaceuticals
Praecis Pharmaceuticals
Bayer
Myelos Corporation
Amgen
Biotechnology General
Chiesi
Cypress Bioscience
Metaphore
Elan
Fujisawa
Genzyme
Merck
Neuromed Tech
Novartis
Pfizer
Pharmacia
QED Rx
Winston Labs
Endo

5. Elected Offices

Raymond Dionne, D.D.S., Ph.D.

Vice-Chair, Analgesiology and Headache section, American Society of Clinical Pharmacology

6. Editorial Responsibilities Other than Reviewing Manuscripts

Raymond Dionne, D.D.S., Ph.D.

Dionne, Phero, Becker: Management of Pain and Anxiety in the Dental Office, W.B. Saunders

Mitchell Max, M.D.

Member of editorial board at Neurology, Pain, J Pain Symptom Management, Journal of Pain

7. Professional or Governmental Advisory Capacity

Raymond Dionne, D.D.S., Ph.D.

Consultant, Endodontics Department, Naval Dental School, Bethesda, Maryland
Consultant, Periodontics Department, Naval Dental School, Bethesda, Maryland

Mitchell Max, M.D.

Advisor to FDA Division of Anesthetic, Critical Care, and Drug Abuse Products, CDER

Member of US Cancer Pain Relief Committee, an educational foundation

8. Appeared as an Invited Expert

Michael Iadarola, Ph.D.

Judge, Student Poster Day, Georgetown University School of Medicine
February, 2001

9. Professional Publications with Outside Co-authors

Raymond Dionne, D.D.S., Ph.D.

Dionne RA, Lepinski AM, Jaber L, Gordon SM, Brahim JS, Hargreaves KM.
Analgesic effects of peripherally administered opioids in clinical models of acute and chronic inflammation. Clin Pharmacology Therap 70:66-73, 2001

Dionne RA, Yagiela JA, Moore PA, Gonty A, Zuniga J, Beirne OR:
Comparative efficacy and safety of four intravenously administered sedative drug regimens for dental outpatients. JADA, 132:740-751, 2001.

Dionne RA, Khan AA, Gordon SM: Analgesia and COX-2 inhibition. Clin Exp Rheumatol 19:S63-70, 2001.

Michael Iadarola, Ph.D.

Coghill RC, Gilron I and Iadarola MJ: Hemispheric lateralization of somatosensory processing. J Neurophysiol 85:2602-2612, 2001

- Olah Z, Szabo T, Hough C, Fields RD, Caudle RM, Karai L, Blumberg PM and Iadarola MJ: Real time dynamics of Ca⁺⁺ cytotoxicity conferred by ligand-induced activation of the vanilloid receptor (VR1). *J Biol Chem* 276: 11021-11-31, 2001.
- Yang HYT, Wilkening S and Iadarola MJ: Spinal cord genes enriched in dorsal horn and induced by noxious stimulation identified by subtraction cloning and differential hybridization. *Neuroscience* 103:493-502, 2001.
- Caudle RM, Mannes AJ, Benoliel R, Eliav E and Iadarola MJ: Intrathecally administered cholera toxin blocks allodynia and hyperalgesia in persistent pain models. *J Pain* 2:118-127, 2001
- Finegold AA, Perez F and Iadarola MJ: Antisense knock-down of NMDA receptors by gene transfer to motor neurons in vivo. *Molec Brain Res* 90:17-25, 2001.
- Kedei N, Szabo T, Lile JD, Treanor JJ, Olah Z, Iadarola MJ, Blumberg PM: Analysis of the native quaternary structure of vanilloid receptor 1. *J Biol Chem* 276:28613-9, 2001.
- Olah Z, Karai L and Iadarola MJ: Anadamide activates vanilloid receptor 1 at acidic pH in DRG neurons and cells ectopically expressing VR1. *J Biol Chem* 276: 31163-31170, 2001.
- Benoliel R, Eliav E, Iadarola MJ: Neuropeptide Y in trigeminal ganglion following chronic constriction injury of the rat infraorbital nerve: Is there correlation to somatosensory parameters? *Pain* 91:111-21, 2001.
- Rosier E, Iadarola MJ, Coghill RC: Reproducibility of pain measurement and pain perception. *Pain*, 2002 (in press).
- Saka E, Iadarola MJ, Fitzgerald DJ and Graybiel AM: Striatal cholinergic and somatostatinergic interneurons regulate striosome-matrix excitability. *Proc Natl Acad Sci.* (in press).

Mitchell Max, M.D.

- Max MB, Lynn J, eds. Interactive Textbook of Symptom Research. Bethesda: National Institute of Dental and Craniofacial Research: 2000 (URL: <http://symptomresearch.nih.gov>)
- Woolf CJ, Max MB. Mechanism-based pain diagnosis: issues for analgesic drug development. *Anesthesiology*, 2001;95:241-249.
- Sang CN, Boohar S, Gilron I, Parada S, and Max MB. A randomized, placebo-controlled trial of dextromethorphan and memantine in painful diabetic neuropathy and postherpetic neuralgia. *Anesthesiology*, May, 2002 issue.
- Seltzer Z, Wu T-X, Max MB, Diehl SR. Mapping a gene for neuropathic pain-related behavior following peripheral neurectomy in the mouse. *Pain*, 2001;93:101-106.
- Sang CN, Max MB, Gracely RH. Cutaneous electrical stimulation to characterize detection thresholds for A beta and A delta fibers. *J Pain Symptom Management*, 2002, in press.
- Raja SN, Haythornthwaite JA, Pappagallo M, Clark MR, Trivison TG, Sabeen S, Royall RM, Max MB. A placebo-controlled trial comparing the

analgesic and cognitive effects of opioids and tricyclic antidepressants in postherpetic neuralgia. Submitted, Neurology, December, 2001.

Ta LE, Phero JC, Pillemer SR, Hale-Donze H, McCartney-Francis N, Kingman A, Max MB, Gordon SM, Wahl SM, Dionne RA. Clinical evaluation of patients with failed TMJ implants. Submitted, November, 2001.

10. Other

Michael Iadarola, Ph.D.

Collaborations:

Chuck Vinson, Ph.D., NCI: Pain-mediated gene regulatory control in mice using conditionally expressed dominant negative transcriptional regulators of Fos/Jun, CREB and C/EBP bZip proteins.

Michael Bittner, Ph.D., NHGRI: Genesis of pain: genomic investigation of tissue trauma in humans with a 12,000 gene ink-jet printed microarray.

David Goldman, M.D., NIAAA: Major collaborator in the Genetics of Pain protocol 00-D-055. Genotyping by SNP analysis, SNP discovery and verification with denaturing HPLC.

David FitzGerald, Ph.D. NCI: Development of neuropeptide-PE35 conjugates for treatment of chronic pain and molecular dissection of dorsal spinal cord circuits.

Emmanuel Petricoin, Ph.D., FDA: Major collaborator on a new clinical protocol: Analysis of human serum from chronic pain patients using mass spectrometry and other proteomics approaches.

Brian Martin Ph.D., NIMH: Analysis of rat dorsal spinal cord tissue extracts with and without pain and human CSF and tissue biopsies in persistent pain states using surface-enhanced laser desorption ionization time of flight mass spectrometry.

Michail Sitkovsky, Ph.D., NIAID: Peripheral inflammation and pain responses in hyper-inflammatory adenosine receptor knockout mice.

Dorothy Ciminio-Brown, D.V.M., University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA: Treatment of intractable pain conditions in canine subjects.

Michael Caterina, M.D., Ph.D., Department of Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD: Targeted labeling of the vanilloid receptor 1 using homologous recombination in mice.

Ann M. Graybiel, Ph.D., Chair. Department of Neurobiology, Massachusetts Institute of Technology, Cambridge, MA: Examination of the role of striatal interneurons in controlling excitability and pharmacological sensitivity of striato-pallidal and striato-nigral projection neurons using Substance P-Pseudomonas Exotoxin.

Robert M. Caudle, Ph.D., University of Florida College of Dentistry, Department of Oral Surgery, Division of Neuroscience, Gainesville FL. Vanilloid receptor 1 neurophysiology. and biophysics.

David Longnecker M.D., Chair, Department of Anesthesiology, Hospital of the University of Pennsylvania. Special Volunteer training.

MTAs executed:

GenVec Inc., Gaithersburg MD. GenVec provided us with a humanized NGF leader, beta-endorphin viral vector, in an improved adenovirus backbone. Formerly, this cassette was a mouse NGF leader sequence-human beta-endorphin hybrid.

ChemDiv Inc., San Diego, CA. ChemDiv, Inc., provided a targeted combinatorial chemical library for screening purposes.

Atto Biosciences, Gaithersburg, MD. We provided cells and plasmids expressing VR1 for use in testing a high-throughput cellular imaging microscopy device.

Antibodies and reagents sent out:

Ann Graybiel, Ph.D., Chair. Department of Neurobiology, Massachusetts Institute of Technology, Cambridge, MA: SP-PE35 as noted above.

Norton Neff, Ph.D., Chair, Department of Pharmacology, Ohio State University. Fos/FRA antibody.

Society for Neuroscience, 9 presentations from the Neuronal Gene Expression Unit.

Functional Genomics Unit

Functional Genomics Unit

1. Invited Talks

Ashok B. Kulkarni, Ph.D.

“A novel phenotype in the mice carrying targeted deletion of amelogenin exon 2” IADR, Chiba, Japan

“Molecular role of Cdk5 in brain” Delhi University, Delhi, India

“Cdk5 conditional knockout mice display ALS phenotype”, Tokyo Metropolitan University, Tokyo, Japan

“Gene Knockout Technology” National Institute of Immunology, Delhi, India

“Cdk5 knockout mice: animal model for neurodegenerative diseases” Haffkine Institute, Bombay, India

Tamizchelvi Thyagarajan, Ph.D.

Dysplastic dentin: Regulation of Dentin sialophosphoprotein by TGF- β 1 in transgenic mice. AADR, Chicago, IL, March 2001.

2. Sessions Chaired at Professional Meetings

Ashok B. Kulkarni, Ph.D.

“Amelogenesis/Enamel Proteins”, IADR, Chiba, Japan

3. Symposia, Meetings, or Conferences Organized

Ashok B. Kulkarni, Ph.D.

“Gene knockout mouse workshop” NIN, New Delhi, India, March 2001

4. Consultant for Universities or Industries

5. Elected Offices

6. Editorial Responsibilities Other than Reviewing Manuscripts

Ashok B. Kulkarni, Ph.D.

Member Editorial Board, *Life XYZ*

7. Professional or Governmental Advisory Capacity

Ashok B. Kulkarni, Ph.D.

NIH- Animal Research Advisory Committee

NIH- Mouse Genetics Committee

NIH- Non Mammalian Genome Committee

8. Appeared as an Invited Expert

9. Professional Publications with Outside Co-authors

Ashok B. Kulkarni, Ph.D.

- Ko J, Humbert S, Bronson RT, Takahashi S, Kulkarni AB, Li E, Tsai LH. P35 and P39 are essential for cyclin-dependent kinase 5 function during neurodevelopment. *J Neurosci* 2001;21:(17)6758-71.
- Gibson CW, Yuan ZA, Hall B, Longenecker G, Chen EH, Thyagarajan T, Sreenath T, Wright JT, Decker S, Piddington R, Harrison G, Kulkarni AB. Amelogenin-deficient mice display an amelogenesis imperfecta phenotype. *J Biol Chem* 2001;276:(34)31871-75.
- Hirasawa M, Cho A, Sreenath T, Sauer B, Julien JP, Kulkarni AB. Neuron-specific expression of Cre recombinase during the late phase of brain development. *Neurosci Res* 2001;40:(2)125-32.
- Thyagarajan T, Sreenath T, Cho A, Wright JT, Kulkarni AB. Reduced expression of dentin sialophosphoprotein is associated with dysplastic dentin in mice overexpressing transforming growth factor-beta 1 in teeth. *J Biol Chem* 2001;276:(14)11016-20.
- Ohshima T, Ogawa M, Veeranna, Hirasawa M, Longenecker G, Ishiguro K, Pant HC, Brady RO, Kulkarni AB, Mikoshiba K. Synergistic contributions of cyclin-dependent kinase 5/p35 and Reelin/Dab1 to the positioning of cortical neurons in the developing mouse brain. *Proc Natl Acad Sci USA* 2001;98:(5)2764-69.
- Tanaka T, Veeranna, Ohshima T, Rajan P, Amin ND, Cho A, Sreenath T, Pant HC, Brady RO, Kulkarni AB. Neuronal cyclin-dependent kinase 5 activity is critical for survival. *J Neurosci* 2001;21:(2)550-58.
- Ashcroft GS, Lei KJ, Jin WW, Longenecker G, Kulkarni AB, Greenwell-Wild T, Hale-Donze H, McGrady G, Song XY, Wahl SM. Secretory leukocyte protease inhibitor mediates non-redundant functions necessary for normal wound healing. *Nature Medicine* 2000;6:(10)1147-53.

10. Other

Ashok B. Kulkarni, Ph.D.

- Material Transfer Agreements with numerous investigators for providing TGF- β 1, Cdk5, Fabry and Amelogenin knockout mice in US, Europe, and Japan.
- Licensed Fabry mice to OSIRIS Inc. for developing experimental gene therapy approaches to treat Fabry disease
- Collaborative studies on tooth development, growth factors, and Cdk5 biology:
- Dr. Rena D'Souza, UTHSC, Houston, TX
- Dr. Carolyn Gibson, U.Penn., Philadelphia, PA
- Dr. Michelle Goldberg, Paris Dental University, Paris, France
- Dr. Stefan Karlsson, U. Lund, Lund, Sweden
- Dr. Mary MacDougall, UTHSC, San Antonio, TX
- Dr. Toshio Ohshima, RIKEN, Tokyo, Japan
- Dr. Martha Somerman, U. Michigan, Ann Arbor, MI
- Dr. J. Tim Wright, UNC, Chapel Hill, NC

Immunopathology Section

Immunopathology Section

1. Invited Talks
2. Sessions Chaired at Professional Meetings
3. Symposia Meetings or Conferences Organized
4. Consultant for Universities or Industries
5. Elected Offices
6. Editorial Responsibilities Other than Reviewing Manuscripts
7. Professional or Governmental Advisory Capacity

Larry M. Wahl, Ph.D.

Member of the Peer Review Committee on Cell Structure and Metastasis, American Cancer Society

8. Appeared as an Invited Expert"
9. Professional Publications with Outside Collaborators

Larry M. Wahl, Ph.D.

¹Snyder, S. K., ¹Wessner D. H., ¹Wessells J. L., ¹Waterhouse R. M., Wahl L. M., ²Zimmermann W., ¹Dveksler G. S. Pregnancy-specific glycoproteins function as immunomodulators by inducing secretion of IL-10, IL-6 and TGF-beta1 by human monocytes. *Am. J. Reprod. Immunol.* 45:205-216, 2001. (¹Uniformed Services University of the Health Sciences, Bethesda, MD, ²University of Freiburg, Freiburg, Germany)

¹Byrnes, A. A., ²Ma X., ¹Como P., ¹Park K., Wahl L., ³Wolf S. F., ³Zhou H., ²Trinchieri G., ¹Karp C. L. Type I interferons and IL-12: convergence and cross-regulation among mediators of cellular immunity. *Eur. J. Immunol.* 31:2026-2034, 2001. (¹Johns Hopkins University, Baltimore, MD, ²The Wistar Institute, Philadelphia, PA, ³Genetics Institute, Andover, ME)

¹Lam, L. T., ¹Pickeral O. K., ²Peng A. C., ¹Rosenwald A., ¹Hurt E. M., ¹Giltane J. M., ¹Averett L. M., ¹Zhao H., ¹Davis R. E., ¹Sathyamoorthy M., Wahl L. M., ³Harris E. D., ³Mikovits J. A., ³Monks A. P., ³Hollingshead M. G., ³Sausville E. A., ¹Staudt L. M. Genomic-scale measurement of mRNA turnover and the mechanisms of action of the anti-cancer drug Flavopiridol. *Genome Biol.* 2(10):research0041.1-0041.11., 2001. (¹Center for Cancer Research, NCI, NIH, Bethesda, MD, ²The EMMES Corporation, Rockville, MD, ³Division of Cancer Treatment and Diagnosis, NCI, Bethesda, MD)

¹Yang, X. Y., ²Wang L. H., ¹Mihalic K., ¹Xiao W., ¹Chen T., ²Li P., Wahl L. M.,
²Farrar W. L. Interleukin (IL)-4 indirectly suppresses IL-2 production by
human T lymphocytes via peroxisome proliferator-activated receptor γ
activated by macrophage-derived 12/15-lipoxygenase ligands. J. Biol.
Chem. 277:3973-3978, 2002. (¹Science Applications International
Corporation, Frederick, MD, NCI, NIH, Frederick, MD)

10. Other

Larry M. Wahl, Ph.D.

Dr. Jacob Hochman, The Hebrew University of Jerusalem, Jerusalem, Israel,
Project: The role of matrix metalloproteinases in the infiltration of malignant
lymphoma to the eye and brain.

Matrix Metalloproteinase Unit

Matrix Metalloproteinase Unit

1. Invited Talks

Henning Birkedal-Hansen, D.D.S., Ph.D.

“Frontiers of Science in Dentistry”, Keynote speaker at the Third Annual Research/Table Clinic Day, University of Michigan School of Dentistry, Ann Arbor, MI, February 2001

“Frontiers of Science in Dentistry”, Keynote Speaker at the Annual Dental Science Symposium, University of Texas Health Science Center, San Antonio, TX, March 2001

“Membrane-bound proteolytic enzymes and cancer”, Invited Speaker, International Congress Palermo, Italy, May, 2001

“Frontiers of Science in Dentistry”, Keynote Speaker, University of Zurich, Switzerland; Biannual Meeting of Swiss Dental Faculties; September 2001

Kenn Holmbeck, Ph.D.

“MP1-MMP is an Essential Tool in Connective Tissue Housekeeping”, in the mini-symposium “Murine Models of Genetic Bone Disease”, NIH Research Festival, October 2001

2. Sessions Chaired at Professional Meetings

Henning Birkedal-Hansen, D.D.S., Ph.D.

“MMPs: The Field at a Cross-Road”, Session Chair at the Matrix Metalloproteinase Gordon Conference, Il Ciocco, Italy, May 2001

3. Symposia, Meetings, or Conferences Organized

Henning Birkedal-Hansen, D.D.S., Ph.D.

Gordon Research Conference on “Matrix Metalloproteinase”, Il Ciocco, Italy, May 2001

4. Consultant for Universities or Industries

5. Elected Offices

6. Editorial Responsibilities Other than Reviewing Manuscripts

Henning Birkedal-Hansen, D.D.S., Ph.D.

Member Editorial Board, *Oral Diseases*

7. Professional or Governmental Advisory Capacity

Henning Birkedal-Hansen, D.D.S., Ph.D.

NIH Senior Biomedical Research Service Committee

8. Appeared as an Invited Expert

9. Professional Publications with Outside Co-authors

Henning Birkedal-Hansen, D.D.S., Ph.D.

Rungpanit N, Chan D, Holmbeck K, Birkedal-Hansen H, Polarek J, Yang C, Bateman JF, Thompson EW: Gelatinase A (MMP-2) activation by skin fibroblasts: dependence on MT1-MMP expression and fibrillar collagen form. *Matrix Biology* 20: 193-203, 2001.

Shankavaram UT, Lai W.-C., Netzel-Arnett S, Mangan PR, Ardans JA, Caterina N, Stetler-Stevenson WG, Birkedal-Hansen H, and Wahl L: Monocyte membrane type 1-matrix metalloproteinase: prostaglandin-dependent regulation and role in MMP-2 activation. *Journal of Biological Chemistry*, 276: 19027-19032, 2001.

Aframian DJ, Zheng C, Goldsmith C M, Nikolovski J, Cukierman E, Yamada KM, Mooney DJ, Birkedal-Hansen H, and Baum BJ. Using HSV-thymidine kinase for safety in an allogeneic salivary graft cell line. *Tissue Engineering and Transplantation*, 7:405-413, 2001.

Jiménez MJG, Balbín M, Alvarez J, Komori T, Bianco P, Holmbeck K, Birkedal-Hansen H, López JM, and López-Otín C: A regulatory cascade involving retinoic acid, Cbfa1, and matrix metalloproteinases is coupled to the development of a process of osteogenic differentiation of chondrocytes. *Journal of Cell Biology*, 155:1333-1344, 2001.

Windsor LJ, Havemose Poulsen A, Yamada S, Lyons JG, Birkedal-Hansen B, Stetler-Stevenson W, and Birkedal-Hansen H: Matrix Metalloproteinases; *Current Protocols in Cell Biology*, in press.

10. Other

Molecular Structural Biology Unit

Molecular Structural Biology Unit

1. Invited Talks

Dennis A. Torchia, Ph.D.

“Structural Dynamics of HIV Protease, Free and Bound to Potent Inhibitors”
Keystone Symposium, Frontiers of NMR in Molecular Biology VII,
Big Sky, Montana

“Molecular Dynamics of HIV Protease in Solution from Measurements of ¹H,
²H, ¹³C and ¹⁵N Spin Relaxation”, 9th Chianti Workshop on Magnetic
Resonance, Pisa, Italy

“Dynamics and Function of Ribosomal Proteins and HIV-1 Protease”, Yale
University, Chemistry Department Research Symposium, New Haven,
Connecticut

2. Sessions Chaired at Professional Meetings

Dennis A. Torchia, Ph.D.

New Results for Proteins in the Solid State ”Keystone Symposium, Frontiers of
NMR in Molecular Biology VII Session “Big Sky, Montana

3. Symposia, Meetings or Conferences Organized

4. Consultant for Universities or Industries

5. Elected Offices

6. Editorial Responsibilities Other than Reviewing Manuscript

Dennis A. Torchia, Ph.D.

Editorial Board, *Proteins, Structure, Function Genetics*

7. Professional or Governmental Advisory Capacity

Dennis A. Torchia, Ph.D.

Member, advisory panel for Harvard/MIT National NMR Resource

8. Appeared as an Invited Expert

9. Professional Publications with Outside Co-authors

Dennis A. Torchia, Ph.D.

Ishima R, Louis JM¹, Torchia DA. Characterization of two hydrophobic clusters
in HIV-1 protease by NMR spin relaxation in solution, *Journal of*
Molecular Biology, 2001, 305, 515-521. (¹NIDDK, NIH, Bethesda, MD)

- Markus MA, Triantafillidou D¹, Choli-Papadopoulou T¹, Torchia DA. ¹⁵N, and ¹³C assignments and secondary structure identification for full-length ribosomal protein L11 from *Thermus thermophilus*, *J. Biomol. NMR* 2001, 20, 293-294. (¹University of Athens, Athens, Greece)
- Ishima R, Petkova AP¹, Louis JM¹, Torchia DA. Comparison of methyl axis order parameters derived from Model-free analyses of ²H and ¹³C longitudinal and transverse relaxation rates measured in the same protein sample, *J. Am. Chem. Soc.*, 2001, 123, 6164-6171. (¹NIDDK, NIH, Bethesda, MD)
- Ishima R, Louis JM, Torchia DA. Optimized labeling of ¹³CHD2 methyl isotopomers in perdeuterated proteins: potential advantages for ¹³C relaxation studies of methyl dynamics of larger proteins, *J. Biomol. NMR*, 2001, 21, 167-171. (¹NIDDK, NIH, Bethesda, MD)
- Ishima R, Ghirlando R¹, Tozser J¹, Gronenborn AM¹, Torchia DA, Louis JM.¹ Folded monomer of HIV-1 protease, *J. Biol. Chem.*, 2001, 276, 49110-49116. (¹NIDDK, NIH, Bethesda, MD)
- Freedberg DI¹, Ishima R, Jacob J, Wang Y-X, Kustanovich I², Louis JM³, Torchia DA. Rapid structural fluctuation of the free HIV protease flaps in solution: Relationship to crystal structures and comparison with predictions of dynamics calculations, *Protein Sci.*, 2002, 11, 221-232. (¹Bureau of Biologics, FDA, Bethesda, MD; ²Hebrew Univ., Jerusalem, Israel; ³NIDDK, NIH, Bethesda, MD)

10. Other

Office of Education

Office of Education

1. Invited Talks

Sharon Gordon, D.D.S., M.P.H.

“Research Training Opportunities for the New Science”, May, 2001

2. Sessions Chaired at Professional Meetings

3. Symposia Meetings or Conferences Organized

4. Consultant for Universities or Industries

Sharon Gordon, D.D.S., M.P.H.

Member, Graduate Student Committee (Doctorate)

March 1999 to present

Medical University of South Carolina

5. Elected Offices

Sharon Gordon, D.D.S., M.P.H.

International Association of Dental Research/American Association of Dental Research,

Pharmacology, Toxicology, Therapeutics Group, Secretary/Treasurer, March 1999-2002

American Association of Dental Research, Washington DC Section,

Secretary/Treasurer, March 2000-2003

6. Editorial Responsibilities Other than Reviewing Manuscripts

7. Professional or Governmental Advisory Capacity

8. Appeared as an Invited Expert for “NIDCR Research Training Opportunities”

Sharon Gordon, D.D.S., M.P.H.

March: AADR annual meeting, Chicago, IL

April: ADA Dental Student Research Conference, Chicago, IL

May: Louisiana State University, Shreveport, LA

9. Professional Publications with Outside Co-authors

Sharon Gordon, D.D.S., M.P.H.

Dionne RA, Lepinski AM, Gordon SM, Jaber L, Brahim JS, Hargreaves KM.

Analgesic effects of peripherally administered opioids in clinical models of acute and chronic inflammation. Clinical Pharmacol and Ther, 2001; 70:66-73.

10. Other

